UPDATE TO DECUS PDP-11 CATALOG

DIGITGRAPH
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Tucson, Arizona 85717

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UPDATED - January 1976

DECUS

January 1976

CHANGES INCLUDED

11-70a	DOS BASIC, V2A New abstract New tape - 20 NOV 75
11-160	BLISS-11 600' magtape available as DECUS 10-213
RSTS11-61a	HELPER New abstract New tapes - 27 JUN 75 New documentation

January 1976

GENERAL INFORMATION

PAYMENT

All DECUS service charges are to help defray the cost of reproduction, handling and postage. All orders must be accompanied by cash, DECUS Coupons or Purchase Order. Please make checks payable to DECUS.

Because of the difficulties encountered by many installations in obtaining Purchase Orders for small amounts, DECUS Coupons may be ordered for any amount and used as subsequent payment for DECUS orders. Coupons are available in $1.00 and $5.00 denominations. They may be ordered as DECUS NO. 0051.

Payment for DECUS Coupons must be made in advance. Purchase Orders for coupons must be paid before coupons may be redeemed for DECUS material.

All charges are in U. S. Dollars. A $2.00 invoicing charge is added to all orders which are not prepaid.

All charges are subject to change without notice.

DECUS order processing and accounting functions are completely separate from those of the corporation. Do not combine orders.

Please do not ask Digital field office personnel, software specialists or salespeople to place a DECUS order for you. To do so may delay direct action.

No tapes may be returned for credit. Therefore it is important that the correct media be specified at the time an order is placed.

European Users - Payment may be made in your currency to: Martha Ries, Digital Equipment Co., Int'l-Europe, Case Postale 340, 1211 Geneva 26, Switzerland. Please refer to currency exchange charts available from that office.

Australian Users and New Zealand Users - Payment may be made in your currency to DECUS Australia, P. O. Box 491, Crows Nest, NSW, 2065 Australia. Please refer to currency exchange charts available from that office.

WRITE-UPS

With certain exceptions single copies of associated write-ups are automatically included at no charge with programs ordered and with all library tapes.

Most write-ups may also be requested without tapes. A $1.00 service charge per write-up will apply.

EXCEPTIONS: Write-ups for which an individual service charge is indicated.

TAPES

In some cases it is possible to pack programs on DECtape. Such cases will be considered on an individual basis. Please contact the appropriate DECUS Library Controller for specific information.

Programs customarily distributed on paper tape will not be packed on DECtape.

RSTS-11 programs are on disk and can be transferred to any distribution media (paper tape, DECtape, magtape or disk). Service charges will vary according to the media involved. Contact the PDP-11 controller for complete information.

All User Supplied DECtapes must be new and formatted. DECUS cannot/will not copy programs to unformatted tapes.

When it is indicated that certain programs occupy the same tape, only one service charge will apply for any combination of programs on that tape.

DOS

DECUS NO.	
11-11	DECtape Copy Routine
11-21	CIOFB: Overlay File Builder/Editor
11-22	DFPEEK: Disk Inspect/Patch Routine
11-23	BINFED: Binary Module List/Patch Program
11-26	DSKSAV: Disk SAVE/RESTORE
11-48	TRACE: Debugging Program
11-50	UNPAL-11: Core-Image Disassembler
11-64a	DOS Version of BASIC
11-65	EDUALO-RK078: Version of EDU70 Multi-User BASIC
11-67	EBCDIC to ASCII Magtape Conversion
11-68	ALGEBRA: Manipulates Logical Expressions
11-69	ML/I Macro Processor
11-70a	DOS BASIC (Simple Version)
11-73	LP and CR: DOS Drivers for Use with A. B. Dick Videojet Printer
11-75	LOADER: Modified Absolute Loader
11-78	DFWFT: Discrete Fast Walsh-Fourier Transform Subroutine
11-80	PARITY: Paper Tape Compatibility with I.C.L.
11-81	MTFDEL: TU1Ø Magtape File Deleting Program
11-82	RK11 Disk to Disk Duplicator
11-83	KØ82.FILDMP with /PA(L11) Switch Option
11-86	EDDY: Scope Oriented Editor
11-87	CRTEXT: Alphanumeric Display on Point-Plot CRT
11-88	COMPU/CORDER PDP-11 DOS Driver
11-89	ZERO: Cassette Initialization
11-91a	BLDP11: Block Display Program
11-92	SAPLOD: Stand-Alone Program Loader
11-93A	ADC: Multiple Entry Subroutine for A/D Conversion
11-93B	SCORE: Multiple Entry Subroutine to Extract Segments from Contiguous File
11-93C	NPACK: Subroutine to RAD50 an ASCII String
11-98	MASK: Bit Level Subroutine for FORTRAN Programs
11-99	KTDVR: Keyboard Terminal Driver
11-100	LP.PAL and SP.PAL: TTY Drivers for Printer, Punch and Reader of V4 Monitor

DECUS NO.	
11-102	FBTRAN: Formatted Binary Transfer
11-103	STRESS: Two-Dimensional Stress Analysis of Elastic Solids
11-104	HEAT: Two Dimensional Steady State Conduction Heat Transfer Analysis
11-106	Assorted DOS-11 Routines
11-109a	IOS: Formatted Input/Output Task Stacker and Processor
11-111	LEM: Simulated Lunar Landing
11-112	Matrix Equation Solver and Matrix Inverter
11-113	READ: FORTRAN Compatible Free Format Input Routines
11-114	GT40.MAC: FORTRAN Subroutine Set for GT40 Series Display
11-115	One Programmer's Utility Package
11-116	BACADI: ASCII-EBCDIC Magtape File Dump
11-117a	TY.MAC: Driver for Additional Teletypes
11-122	DVRTST: Driver Testing Package
11-124	BLKUSE: Block Usage Summary for File Structured Devices
11-128	QUANDA: Question and Answer Dialog on the GT40 CRT
11-130	VT: DOS Compatible Driver for Tektronix 4010 Graphics Display Terminal
11-133	COLIST: Column Lister
11-134	GONIF: Read, Examine and Modify Data on Block-Structured Device
11-143	STIRS: Self-Training Interpretive and Retrieval System Programs for Mass Spectral Data
11-144	DELFIL: Delete a File from FORTRAN
11-147a	AMD: CDC200 UT Simulator
11-150	RFSAV and RFRST: Save and Restore RF Disk Image with RK Disk
11-151	FFT: Conversational Fast Fourier Transform
11-155	RADIX: Base Conversion Routine
11-156	DOS FOCAL, DOS Drivers and LIST-11
11-158	STAGE2 for the PDP-11
11-166	CILINK: Swapping Overlay Loader
11-170	DOS/RT11 9-Track Magtape Generate/Read Programs for UNIVAC
11-171	DEAS: Release Device Assignment Table Segments and Associated Memory

11-172	RTDOS: Allows for "Real-Time" I/O
11-179	Fast Fourier Transform Routine
11-186	Absolute Loader
11-193	TERM.MAC: Terminet Device Driver
11-194	KA: Small Console Driver
11-195	PCP-11/MFT-11: DOS Timesharing and Catalogued Procedures
11-196	REDISK: DOS File-Structure Rebuilder
11-202	EDITX: Improved DOS EDIT
11-203	FORM: Formatter for MACRO Source Code
11-204	MFT Utility Package
11-206	DSKPAT: Disk Inspect/Patch Routine
11-208	BIOMAC: Macros for Structured Programming in MACRO
11-210	Everhart Collection on Magtape
11-223	DOSLST: DOS Directory/File Lister
11-227	TAGFIL.FTN: Directory Annotation
11-234	MUD11: Two-user Time-share

DECUS NO.		DECUS NO.
11-146	PDM7Ø Support Routines	
11-162	CHSSLV: A Chess Problem Solver	
11-170	DOS/RT11 9-Track Magtape Generate/Read Programs for UNIVAC	
11-174	Star-Trek (SPCWR)	
11-175	DC.MAC: RC Disk Driver	
11-176	RUN.MAC-SSWTCH.MAC: Implementing CALL RUN and CALL SSWTCH to RT-11 FORTRAN	
11-177	PARITY.MAC: High Speed Even (Odd) Parity Paper Punch Driver	
11-181	Modification of the RT-11 General Terminal Handler to Simulate Hard Copy Form Control	
11-182	Modifying RT-11 to Run on an RC Disk as Systems Device	
11-184	KB.MAC: Non-Console Teletype Driver	
11-186	Absolute Loader	
11-187	TAXRTN: Canadian Individual Income Tax Return	
11-188	Forms-Control Simulation for DECwriters and Teletypes	
11-207	MRMLIB: FORTRAN Callable Subroutines	
11-213	LIB.FOR: FORTRAN Library Routines	
11-214	RENUM: FORTRAN Renumbering Program	
11-215	TRACE.MAC/TR.MAC: Debugging Tools for Writing Assembly Language Programs	
11-216	FORMAT: DECtape Formatter	
11-221	ODT11T: RT-11 ODT with TRACE Features Added	
11-224	MPS Cross Assembly Programs for RT-11	
11-226	RO.MAC: MT ROLLIN File Device Driver	
11-227	TAGFIL.FTN: Directory Annotation	
11-229	INDEX: FORTRAN Cross Referencing	
11-231	ALGOL: Compiler and Run-Time System for ALGOL-60	
11-232	FORTH: Scientific Programming System	
11-235	CYCLES: Biorythm Chart	

DECUS NO.	
11-108	TTYALL: Multi-Teletype Dispatcher
11-148	CDP: Core Dump
11-149a	SNPDMP: Snapshot Core Dump
11-157A,B,C	RSX-11D Task Package
11-163	TECO: Text Editing and Correcting
11-178	CDA: Crash Dump Analyzer
11-179	Fast Fourier Transform Routine
11-205	Core-Only RSX-11M
11-212	TECO: Text Editor and Corrector for RSX-11D V6A
11-217	LP.MAC: Handler for Use with A. B. DicK Videojet Line Printer
11-218	Device Handler and Plotting Package for Houston Instrument DP1-Plotter
11-222	RUNOFF, V6A: Facilitate Preparation of Typed or Printed Manuscripts
11-230	RMDEMO: Displays Pertinent System Information
11-236	SOTS: Small FORTRAN OTS

DECUS NO.

DECUS NO.		DECUS NO.
11-116	BACADI: ASCII-EBCDIC Magnetic File Dump	
11-189	FFTSC: 16-Bit Complex FFT	
11-190	ISNCS2 and IQSIN2: 16-Bit Trigonometric Functions	
11-191	ISNCS4 and IQSIN4: 16-Bit Trigonometric Functions	
11-219	PTHEAD: Paper Tape Heading Program	
11-220	PICT: Machine Code Tester	
11-228	Contour Plotting Program	

I. PROGRAMMING LANGUAGE, MONITOR, PROGRAMMING SYSTEM

DECUS NO.	TITLE
11-34	PALEDIT
11-38	PAL-11A (12K) Card Reader Assembler
11-42	PAL8X (Stand Alone Version ØØ)
11-43a	DECtape Operating System
11-62	Procedure for Interfacing to FOCAL-11
11-63A.a	SYSGEN Procedure for SRL Magtape Operating System
11-63C.a	SRLSYS - Magtape System Monitor for PDP-11
11-63F.a	PAL-11M - Magnetic Tape Absolute Assembler
11-63G.a	PAL-11MR - Magnetic Tape Relocatable Assembler
11-63J.a	7 Track Magtape Containing Source Code for SRL Magnetic Operating System 12K
11-63K.a	9 Trach Magtape Containing Source Code for SRL Magnetic Operating System RELEASE 2 for 12K
11-64a	DOS Version of BASIC
11-65	EDUALO - RKØ78
11-69	ML/I Macro Processor
11-70a	DOS BASIC (Version 2A)
11-73	LP and CR PDP-11 DOS Drivers for Use with A. B. Dick Videojet Printer
11-76	PDPAS - PDP-11 Assembler
11-84	IOXCRT - Input Output Executive with CRT and Hard Copier
11-85	IOXEXT - Input Output Executive Extended
11-86	EDDY - A Scope Oriented Editor for the PDP-11
11-93C	NPACK
11-95	Real-Time Overlay for 1-8 User BASIC-11
11-96	*1 (STAR ONE)
11-99	KTDVR - Keyboard Terminal Driver for DOS V4 and V8
11-108	TTYALL, Multi-Teletype Dispatcher
11-129	Single User BASIC, Version GEO8B
11-144	DELFIL, Delete a File From FORTRAN
11-146	PDM7Ø Support Routines
11-156	DOS FOCAL, DOS Drivers and LIST-11
11-158	STAGE2 for the PDP-11
11-160	BLISS-11
11-166	CILINK - A Swapping Overlay Loader
11-167	Real Time EXF for Single User BASIC
11-169	Tri-Data Paper-Tape PAL-11A Assembler
11-172	RTDOS
11-175	DC.MAC - RC Disk Driver for RT11
11-176	RUN.MAC/SSWTCH.MAC
11-177	PARITY.MAC - High Speed Even (Odd) Parity Paper Punch Driver
11-181	Modification of the RT-11 General Terminal Handler to Simulate Hard Copy Form Control
11-182	Modifying RT-11 V02-01 to Run on an RC Disk as System Device

I. PROGRAMMING LANGUAGE, MONITOR, PROGRAMMING SYSTEM

DECUS NO.	TITLE
11-184	KB.MAC Non-Console Teletype Driver for RT-11
11-195	PCP-11/MFT-11 - DOS Timesharing and Catalogued Procedures
11-201	PAL-8, 11 - A PDP-8 Assembler Implemented on a PDP-11
11-205	Core-Only - RSX-11M, Version 1
11-208	BIOMAC - Macros for Structured Programming in MACRO
11-224	MPS Cross Assembly Programs for RT11
11-226	RO.MAC - MT ROLLIN File Device Driver
11-231	ALGOL, RT11
11-232	FORTH Programming System for the PDP-11
11-234	MUD11
11-236	SOTS - Small FORTRAN OTS for RSX
RSTS11-49	SADSM
RSTS11-50	MIGIT
RSTS11-72	1401 Simulator (RSTS Version)
RSTS11-75	8008.BAS and 8080.BAS
RSTS11-80	TDL/SCRIPT
RSTS11-81	BATCH - Batch Processing for the PDP-11/20
RSTS11-84	OMSI PILOT-73

II. TEXT EDITING, TEXT MANIPULATION

DECUS NO.	TITLE
11-15	PDP-11 Datapoint Editor - JPEDIT
11-23	BINFED/DOS Based Binary Module List/ Patch Program
11-30	ENCODE/DECODE for PDP-11 FORTRAN IV
11-33	EDITX
11-34	PALEDIT
11-46	Two Conversion Routines EBTASC and ASCTEB
11-55	Modifications to ED-11 V004A
11-63E.a	ED-11M- Magnetic Tape Text Editor
11-86	EDDY - A Scope Oriented Editor for the PDP-11
11-90	Listing Program for a PDP-11 Computer
11-106	Assorted Routines for use with DOS-11
11-132	TED-11A - Text Editor
11-133	COLIST
11-141	FXSUBS
11-163	RSX-11D TECO
11-188	Forms-Control Simulation for DECwriters and Teletypes
11-202	EDITX - An Improved DOS EDIT
11-208	BIOMAC - Macros for Structured Programming in MACRO
11-212	TECO - Text Editor and Correction for RSX-11D, Version 6A
11-222	RUNOFF, V6A
RSTS11-1a	EDITOR, V6A
RSTS11-2	Utilities, Editors and Hangman Game
RSTS11-3	Text Editor for RSTS
RSTS11-5	CREATE and CREAT1
RSTS11-17	TEXTED
RSTS11-18B	GEDIT - GERMAN Data File Editor
RSTS11-28	Line Editor for RSTS-BASIC (MODIFY)
RSTS11-29	EDIT
RSTS11-32	EDIT8
RSTS11-59	LISTAL.BAS
RSTS11-61a	HELPER - Editing and Renumbering BASIC-PLUS Programs

III. DEBUGGING, DISASSEMBLY, SIMULATION, TRACE, DUMP

DECUS NO.	TITLE
11-8	Dump in Bootstrap Format Binary
11-13	ADUMP
11-20	Trace for PDP-11 Floating Point Package
11-22	DFPEEK/DOS Based Disk Inspect/Patch Routine
11-23	BINFED/DOS Based Binary Module List/ Patch Program
11-26	DSKSAV/DOS Disk SAVE/RESTORE
11-28	Extended ODT-11X
11-48	TRACE Debugging Program
11-50	UNPAL-11
11-52	ODT-11XR
11-58	ODT-11T
11-59	UNPAL-11A Mnemonic Dump
11-66	PALDMP.KØ42
11-74	ODT-11, ODT-11X, Revised
11-79	PDP-11 Reverse Assembler
11-83	KØ82.FILDMP With/PA(L11) Switch Option
11-97	PROCON-11
11-101	Conway's "Life," PAL-11S Version
11-121	WABC Core Dumper
11-122	DVRTST DOS Driver Testing Package
11-134	GONIF
11-138	FODT
11-147a	AMD - CDC 200 Series User Terminal Simulator
11-148	RSX-11D Core Dump
11-149a	SNPDMP
11-157A	RSX-11D Task Package
11-161	1401 Simulator
11-164	Clock Generator
11-208	BIOMAC - Macros for Structured Programming in MACRO
11-215	TRACE.MAC/TR.MAC
11-220	PICT - Machine Code Tester
11-221	ODT11T - RT11 ODT with TRACE Feature Added
11-224	MPS Cross Assembly Programs for RT11
11-229	INDEX - FORTRAN Cross Referencing Program
RSTS11-37	SPRING THING
RSTS11-38	Analog Computer Simulator
RSTS11-69	INVSIM - Inventory Simulations
RSTS11-72	1401 Simulator (RSTS Version)

IV. BINARY LOADING, BINARY PUNCHING

DECUS NO.	TITLE
11-4	PDP-11 Binary Loader
11-19	Core Load to MAINDEC Tape/MAINDEC Tape
11-21	CIOFB/DOS Based Overlay File Builder/ Editor (Version 3)
11-23	BINFED/DOS Based Binary Module List/ Patch Program
11-26	DSKSAV/DOS Disk SAVE/RESTORE
11-29	COPYTAPE
11-31	Binary Tape Interpreter/Address Scanner
11-32	MONUP - DOS Monitor Update Program
11-49	HELP Bootstrap
11-53	PDP-11/10 Loader
11-54	Magtape Loader
11-57	A General-Purpose External Function for PDP-11 BASIC
11-63H.a	LINK-11M
11-63I.a	LOAD-11M - Magnetic Tape Absolute Loader
11-75	LOADER
11-92	SAPLOD - Stand-Alone Program Loader for DOS
11-97	PROCON-11
11-102	FBTRAN - Formatted Binary Transfer
11-109a	IOS - PDP-11/45 Formatted Input/Output Task Stacker and Processor
11-125	MINIPIP-11
11-137	BOOT
11-165	MR11DX
11-168	PDP-11 Program to Load Card Output Produced by the Wang IBM 370/PDP-11 Cross Assembler and Linker
11-186	Absolute Loader for DOS, RT-11 and RSTS
RSTS11-60	PUNCH.BAS

V. DUPLICATION, VERIFICATION

DECUS NO.	TITLE
11-11	PDP-11 DECtape Copy Routine
11-14	Paper Tape Duplicator (High Speed Reader to TTY)
11-29	COPYTAPE
11-31	Binary Tape Interpreter/Address Scanner
11-39	"SUPER DUPER" (Fast PDP-11 DECtape Duplication Routine)
11-63D.a	SRLPIP - A File Manipulation Utility for the PDP-11
11-196	REDISK - DOS File-Structure Rebuilder
RSTS11-57	PACK.BAS
RSTS11-58	MOVERX BAS

VI. NUMERICAL FUNCTION, NUMERICAL INPUT/OUTPUT

DECUS NO.	TITLE
11-1	Recursive Unsigned Radix Print
11-2	Single Precision Unsigned Multiply/Divide
11-9	Slow Matrix Inversion for Real Numbers
11-16a	FFT11C - A Fast Fourier Transform Subroutine for Complex Data
11-27	BIOF - BASIC Input/Output Function
11-30	ENCODE/DECODE for PDP-11 FORTRAN IV
11-57	A General-Purpose External Function for PDP-11 BASIC
11-68	ALGEBRA - A Program for Manipulating Logical Expressions
11-71	ACCEPT
11-105	POLFIT - A FOCAL Program to Fit Data to Polynomials up to 6th Degree
11-110	Utility Routines for a PDP-11/45 with a Floating Point Processor
11-112	Fast, Accurate Matrix Equation Solver and Matrix Inverter
11-113	READ - FORTRAN Compatible Free Format Input Routines
11-115	One Programmer's Utility Package for the PDP-11
11-155	RADIX - Base Conversion Routine
11-190	ISNCS2 and IQSIN2 - 16-Bit Trigonometric Functions
11-191	ISNCS4 and IQSIN4 - 16-Bit Trigonometric Functions
11-207	MRMLIB
RSTS11-9	Project DELTA Educational Package, Section A, Mathematics Programs
RSTS11-43a	Elementary Instructional Programs
RSTS11-44a	Fractions Drill and Practice
RSTS11-47	Project DELTA Educational Package, Section E Additional Mathematics Programs Section F Teacher Assistance Programs
RSTS11-66	Elementary Instructional Programs, Vol. II
RSTS11-82	Laramie High ECMEP Math Programs

VII. UTILITY

DECUS NO.	TITLE
11-19	Core Load to MAINDEC Tape/MAINDEC Tape
11-21	CIOFB/DOS Based Overlay File Builder/ Editor (Version 3)
11-22	DFPEEK/DOS Based Disk Inspect/Patch Routine
11-25	File Compatibility Package PDP-9/15 DECtape to PDP-11 DECtape
11-26	DSKSAV/DOS Disk SAVE/RESTORE
11-29	COPYTAPE
11-31	Binary Tape Interpreter/Address Scanner
11-32	MONUP - DOS Monitor Update Program
11-35	COMBINE
11-36	Parity Subroutine
11-40	DSKDMP and MTDUMP
11-46	Two Conversion Routines EBTASC and ASCTEB
11-50	UNPAL-11
11-51	PPMT and DUMPMT
11-53	PDP-11/10 Loader
11-60	DSKBOT
11-61	BXMIT
11-63B.a	IOXMTA - IOX Plus TU1Ø Magnetic Tape
11-63D.a	SRLPIP - A File Manipulation Utility for the PDP-11
11-66	PALDMP.KØ42
11-67	EBCDIC to ASCII Magtape Conversion
11-68	ALGEBRA - A Program for Manipulating Logical Expressions
11-71	ACCEPT
11-75	LOADER
11-80	PARITY - Paper Tape Compatibility with I.C.L.
11-81	MTFDEL - TU1Ø Magtape File Deletion Program
11-82	RK11 Disk to Disk Duplicator
11-83	KØ82.FILDMP with /PA(L11) Switch Option
11-86	EDDY - A Scope Oriented Editor for the PDP-11
11-87	CRTEXT
11-90	Listing Program for a PDP-11 Computer
11-91a	BLDP11 Block Display Program
11-92	SAPLOD - Stand-Alone Program Loader for DOS
11-102	FBTRAN - Formatted Binary Transfer
11-106	Assorted Routines for use with DOS-11
11-115	One Programmer's Utility Package for the PDP-11
11-116	BACADI - ASCII-EBCDIC Magtape File Dump
11-117a	TY.MAC - Typewriter Driver for Extra Teletypes for DOS
11-123	AN5800 - A Group of Routines for Handling the Analogic AN5800
11-124	BLKUSE - Block Usage Summary for File Structured Devices
11-125	MINIPIP-11
11-128	QUANDA
11-139	QANDA
11-144	DELFIL - Delete a File from FORTRAN

VII. UTILITY (Continued)

DECUS NO.	TITLE
11-147a	AMD - CDC200 UT Simulator
11-150	RFSAV and RFST
11-155	RADIX - Base Conversion Routine
11-157C	RSX-11D Task Package
11-159	READID.MAC
11-165	MR11DX
11-166	CILINK - A Swapping Overlay Loader
11-170	DOS/RT11 - 9-track Magtape Generate/ Read Programs for UNIVAC
11-171	DEAS
11-175	DC.MAC - RC Disk Driver for RT11
11-177	PARITY MAC - High Speed Even (Odd) Parity Paper Punch Driver
11-178	CDA - Crash Dump Analyzer
11-182	Modifying RT-11 V02-01 to Run on an RC Disk as System Device
11-183	LPS-11 IOX Package
11-188	Forms-Control Simulation for DECwriters and Teletypes
11-193	TERM.MAC - Terminet Device Driver for PDP-11/20, DOS V8.02
11-196	REDISK - DOS File-Structure Rebuilder
11-198	MEMSEG - A 4K-123K Bank-At-A-Time PDP-11 Memory Diagnostic
11-199	SYSMAC.THM
11-200	DIBOL Translator
11-204	MFT Utility Package
11-206	DSKPAT
11-207	MRMLIB
11-209	RX11 Floppy Utility
11-213	LIB.FOR - Library Routines
11-214	RENUM - FORTRAN Renumbering Program
11-216	FORMAT - DECtape Formatter for RT-11
11-217	LP.MAC - A Handler for Use With an A. B. Dick Videojet Line Printer Under RSX-11D
11-219	PTHEAD - Paper Tape Heading Program
11-223	DOSLST - DOS Directory/File Lister
11-226	RO.MAC - MT ROLLIN File Device Driver
11-227	TAGFIL.FTN - Directory Annotation Program for DOS and RT11
11-229	INDEX - FORTRAN Cross Referencing Program
11-230	RMDEMO
11-233	A Modified IOX for Handling More Than One Terminal

VII. UTILITY (Continued)

DECUS NO.	TITLE
RSTS11-2	Utility, Editors and Hangman Game
RSTS11-5	CREATE and CREAT1
RSTS11-35	COMSYS - RSTS-11 Communications System
RSTS11-36	READID.MAC
RSTS11-51	ACCMAT - Account Maintenance File
RSTS11-54	TAPFOR.MAC
RSTS11-55	XREF.BAS
RSTS11-56	The Timer Package
RSTS11-57	PACK.BAS
RSTS11-79	RSTS Performance Measurement Package
RSTS11-80	TDL/SCRIPT
RSTS11-83	PAPTAP, MAGTAP, LISTAC - Additional Cusps for RSTS-11

VIII. DISPLAY

11-45	DLINES
11-87	CRTEXT
11-91a	BLDP11 Block Display Program
11-114	GT.40 MAC - A FORTRAN Subroutine Set for the GT40 Series Display (VT11)
11-115	One Programmer's Utility Package for the PDP-11
11-116	BACADI - ASCII-EBCDIC Magtape File Dump
11-128	QUANDA
11-130	VT - PDP-11 DOS Compatible Driver for Tektronix 4010 Graphics Display Terminal
11-139	QANDA
RSTS11-8	System Status Display - Hazeltine 2000

IX. DATA MANAGEMENT, SYMBOL MANIPULATION, SORTING

DECUS NO.	TITLE
11-22	DFPEEK/DOS Based Disk Inspect/Patch Routine
11-23	BINFED/DOS Based Binary Module List/ Patch Program
11-25	File Compatibility Package PDP-9/15 DECtape to PDP-11 DECtape
11-27	BIOF: BASIC Input/Output Function
11-42	PAL8X (Stand Alone Version ØØ)
11-80	PARITY - Paper Tape Compatibility with I.C.L.
11-88	COMPU/CORDER PDP-11 DOS Driver or "How to Make a Cassette Behave Like DECtape"
11-89	ZERO
11-93B	SCORE
11-98	MASK
11-116	BACADI - ASCII-EBCDIC Magtape File Dump
11-118	GULP - GAMMA-11 Utility Program
11-123	AN5800 - A Group of Routines for Handling the Analogic AN5800
11-175	DC.MAC - RC Disk Driver for RT11
11-177	PARITY.MAC - High Speed Even (Odd) Parity Paper Punch Driver
11-183	LPS-11 IOX Package
11-213	LIB.FOR - Library Routines

RSTS11-6a	RESEQ - Program Resequencing
RSTS11-42	MIS - Management Information System
RSTS11-68	SOLVE - Southeastern On-Line Version of Enrollment

X. PROBABILITY, STATISTICS, CURVE FITTING

DECUS NO.	TITLE
11-77	PERMUT - Permutes a Given Sequence of Numbers
11-78	DFWFT - Discrete Fast Walsh-Fourier Transform Subroutine
11-127	Interval Histogram Program V.003
11-207	MRMLIB

RSTS11-10	Project DELTA Educational Package, Section B, Statistics Programs
RSTS11-30	COSAP - Conversationally Oriented Statistical Analysis Package
RSTS11-45	Dartmouth Statistics Programs
RSTS11-68	SOLVE - Southeastern On-Line Version of Enrollment

XI. SCIENTIFIC APPLICATION, ENGINEERING APPLICATION

DECUS NO.	TITLE
11-12	AC Circuit Program
11-16a	FFT11C - A Fast Fourier Transform Subroutine for Complex Data
11-44	Electron Spin Resonance and General Integration Program
11-57	A General-Purpose External Function for PDP-11 BASIC
11-71	ACCEPT
11-78	DFWFT - Discrete Fast Walsh-Fourier Transform Subroutine
11-103	STRESS - A Finite Element Computer Program for Two-Dimensional Stress Analysis of Elastic Solids
11-104	HEAD - A Finite Element Computer Program for Two-Dimensional Steady-State Conduction Heat Transfer Analysis
11-111	"LEM" (Simulation of a Lunar Landing)
11-119	Volume/Dosage Calculation Program for Tc or In
11-120A	Determination of Blood Volume
11-120B	Red Blood Cell Survival
11-126	ECAP
11-127	Interval Histogram Program V.003
11-135	TGH GAMMA-11 Package - HEAD, STOM, RENO
11-136	THYR
11-142	UPTK
11-143	STIRS - Self-Training Interpretive and Retrieval System Programs for Mass Spectral Data
11-145	X-RAY - An On-Line Program for Automatic Electron Microanalysis of Oxides and Silicates Using a Si(Li) Spectrometer
11-151	FFT - A Conversational Fast Fourier Transform
11-152	GAMMA-11 Package - VQ, MTT, QPQS, XEBH
11-153	SMOT
11-154	DEXP
11-179	Fast Fourier Transform Routine
11-185	Gradient-Scintigraphy
11-189	FFTSC - 16-Bit Complex FFT
11-197	FFT Demonstration Package
11-207	MRMLIB

XI. SCIENTIFIC APPLICATION, ENGINEERING APPLICATION

DECUS NO.	TITLE
RSTS11-12	Project DELTA Educational Package, Section D, Electronics and Production Oriented Programs
RSTS11-27	GENES
RSTS11-63	NORTON - Astronomical Ephemeris Program Package
RSTS11-64	NMRSIM - Nuclear Magnetic Resonance Simulation and Plotting Program
RSTS11-65	SPPLT - Hybrid Orbital Contour Plotting Program
RSTS11-67	HPPLOT.BAS - Hewlett-Packard 7202A Graphic Plotter Programs
RSTS11-70	WRIST - Wabash Research Investigation Simulation Teacher
RSTS11-76	Cycles

XII. HARDWARE CONTROL

DECUS NO.	TITLE
11-17	TTY Code to Octal
11-41	DECtape Handler
11-47	External Functions for PDP-11 BASIC
11-55	Modifications to Ed-11 V004A
11-57	A General-Purpose External Function for PDP-11 BASIC
11-63B.a	IOXMTA - IOX Plus TU1Ø Magnetic Tape
11-81	MTFDEL - TU1Ø 7-track Magtape File Deleting Program
11-93A	ADC
11-97	PROCON-11
11-100	LP.PAL, SP.PAL - TTY Drivers for Printer, Punch and Reader of V4 Monitor
11-114	GT40.MAC - A FORTRAN Subroutine Set for the GT40 Series Display (VT11)
11-147a	AMD - CDC 200 UT Simulator
11-175	DC.MAC - RC Disk Driver for RT11
11-177	PARITY.MAC - High Speed Even (Odd) Parity Paper Punch Driver
11-194	KA - The Small Console Driver
11-217	LP.MAC - A Handler for Use With an A. B. Dick Videojet Line Printer Under RSX-11D
11-218	A Device Handler and Plotting Package for Houston Instrument DP1-Plotter Under RSX-11D
11-226	RO.MAC - MT ROLLIN File Device Driver
11-233	A Modified IOX for Handling More Than One Terminal
RSTS11-15	LSFORM - LS11 Centronix Line-Printer Driver for RSTS V4A

XIII. GAME, DEMONSTRATION

DECUS NO.	TITLE
11-3	Dice Game for the PDP-11
11-5	Blackjack for FOCAL-11
11-10	PDP-11 BASIC Demonstration Package
11-37	Conway's Game 'LIFE'
11-72	"3D-TIC-TAC"
11-101	Conway's "Life," PAL-11S Version
11-106	Assorted Routines for Use With DOS-11
11-107	"The Hockey Game"
11-111	"LEM" (Simulation of a Lunar Landing)
11-131	CALEND - Calendar Generator
11-162	CHSSLV - A Chess Problem Solver
11-173	Moonlander (LEM)
11-174	STAR-TREK (SPACWR)
11-180	CAREERS
11-192	SPACE WAR
11-235	CYCLES
RSTS11-2	Utilities, Editors and Hangman Game
RSTS11-13	Games, Puzzles and Recreation - 1
RSTS11-14	Games, Puzzles and Recreation - 2
RSTS11-18A	GERMAN - Adjective Ending Game
RSTS11-18B	GEDIT - GERMAN Data File Editor
RSTS11-19	FAST - ECONMY, ECON2 - ONIONS
RSTS11-20a	TREK - Star Trek Game
RSTS11-21	ROBOT and FIX
RSTS11-24	BPDEMO - Additional BASIC-PLUS Demos
RSTS11-25	BRAVO
RSTS11-37	SPRING THING
RSTS11-39	YACHT - Yachting Championship Results
RSTS11-53	Computer Dating
RSTS11-71	Matrix Co. Game & Demo Package
RSTS11-76	Cycles

XIV. PLOTTING

DECUS NO.	TITLE
11-44	Electron Spin Resonance and General Integration Program
11-47	External Functions for PDP-11 BASIC
11-115	One Programmer's Utility Package for the PDP-11
11-130	VT - PDP-11 DOS Compatible Driver for Tektronix 4010 Graphics Display Terminal
11-140	SQRS
11-141	FXSUBS
11-211	PLOT - Digital Incremental Plotter Software Package
11-218	A Device Handler and Plotting Package for Houston Instrument DP1-Plotter Under RSX-11D
11-225	GT40 Graphics Utility Routines
11-228	Contour Plotting Program
RSTS11-26	ROTATE, POLY, PLOT10, XYPLOT
RSTS11-64	NMRSIM - Nuclear Magnetic Resonance Simulation and Plotting Program
RSTS11-65	SPPLT - Hybrid Orbital Contour Plotting Program
RSTS11-67	HPPLOT.BAS - Hewlett-Packard 7202A Graphic Plotter Programs

XV. DESK CALCULATOR, BUSINESS APPLICATION

DECUS NO.	TITLE
11-187	TAXRTN - Canadian Individual Income Tax Return
RSTS11-7	Accounting Package
RSTS11-11	Project DELTA Educational Package Section C, Business Programs
RSTS11-33	Payroll - Idaho Falls Payroll System
RSTS11-34	Wabash College Student Information System
RSTS11-40	Management Case Studies
RSTS11-41	TYPIST
RSTS11-46	North Country Union High School Administrative Programs
RSTS11-48	Project DELTA Educational Package Section G, Business Programs Section H, Data Processing Programs
RSTS11-52	Fiscal Accounting
RSTS11-69	INVSIM - Inventory Simulations

XVI. MAINTENANCE

11-17	TTY Code to Octal

XVII. MISCELLANEOUS

DECUS NO.	TITLE
11-94	Transformed Z Scores
11-139	QANDA
11-181	Modification of the RT-11 General Terminal Handler to Simulate Hard Copy Form Control
11-187	TAXRTN - Canadian Individual Income Tax Return
11-203	FORM - A Formatter for MACRO Source Code
RSTS11-16	TALK - Inter-Terminal Communication Program
RSTS11-22	TUTRØ1-TUTR17, BASIC Tutoring Programs
RSTS11-23	NAMES and CEMGEN, Computerized Question Generation
RSTS11-31	INRAN, OUTRAN - Computerized Question Generation #2
RSTS11-39	YACHT - Yachting Championship Results
RSTS11-43a	Elementary Instructional Programs
RSTS11-44a	Fractions Drill and Practice
RSTS11-47	Project DELTA Educational Package Section E Additional Math Programs Section F Teacher Assistance Programs
RSTS11-62	Bentley Variety Package
RSTS11-66	Elementary Instructional Programs, Vol. II
RSTS11-68	SOLVE - Southeastern On-Line Version of Enrollment
RSTS11-73	Myers Briggs Personality Type Indicator Scoring Program
RSTS11-74	SYSELF - System Status-Self
RSTS11-77	ULTRAG - Advanced Function Graphing Program
RSTS11-78	XREF - Cross-Referencer for BASIC-PLUS Programs
RSTS11-85	BRANCH - DECAL Branching Scheme for "N" Right Out of "T" Tries

DECUS NO.	TITLE
11-114	GT40.MAC - A FORTRAN Subroutine Set for the GT40 Series Display (VT11)
11-115	One Programmer's Utility Package for the PDP-11
11-116	BACADI, ASCII-EBCDIC Magtape File Dump
11-117a	TY.MAC - Typewriter Driver for Extra Teletypes for DOS
11-118	GULP - GAMMA-11 Utility Program
11-119	Volume/Dosage Calculation Program for TC or In
11-120A&B	Determination of Blood Volume Red Blood Cell Survival
11-121	WABC Core Dumper
11-122	DVRTST - DOS Driver Testing Package
11-123	AN5800 - A Group of Routines for Handling the Analogic AN5800 Data Conversion System
11-124	BLKUSE - Block Usage Summary for File Structured Devices
11-125	MINIPIP-11
11-126	ECAP
11-127	Interval Histogram Program V.003
11-128	QUANDA
11-129	Single User BASIC, Version GEO8B
11-130	VT - PDP-11 DOS Compatible Driver for Tektronix 4010 Graphics Display Terminal
11-131	CALEND - Calendar Generator
11-132	TED-11A - Text Editor
11-133	COLIST
11-134	GONIF
11-135	TGH GAMMA-11 Package - HEAD, STOM, RENO
11-136	THYR
11-137	BOOT
11-138	FODT
11-139	QANDA
11-140	SQRS
11-141	FXSUBS
11-142	UPTK
11-143	STIRS - Self-Training Interpretive and Retrieval System Programs for Mass Spectral Data
11-144	DELFIL - Delete a File from FORTRAN
11-145	X-RAY - An On-Line Program for Automatic Electron Microanalysis of Oxides and Silicates Using a Si(Li) Spectrometer

DECUS NO.	TITLE
11-146	PDM7Ø Support Routines
11-147a	AMD ——— CDC 2000 Series User Terminal Simulator
11-148	RSX-11D Core Dump
11-149a	SNPDMP
11-150	RFSAV and RFRST
11-151	FFT - A Conversational Fast Fourier Transform
11-152	GAMMA-11 Package: VQ, MTT, QPQS, XEBH
11-153	SMOT
11-154	DEXP
11-155	RADIX - Base Conversion Routine
11-156	DOS FOCAL - DOS Drivers and LIST-11
11-157A,B,C	RSX-11D Task Package A. ODT - Initiate Task B. STA - Print Task Status C. FCH - File Change Program
11-158	STAGE2 for the PDP-11
11-159	READID.MAC
11-160	BLISS-11
11-161	1401 Simulator
11-162	CHSSLV - A Chess-Problem Solver
11-163	RSX-11D TECO
11-164	Clock Generator
11-165	MR11DX
11-166	CILINK - A Swapping Overlay Loader
11-167	Real Time EXF for Single User BASIC
11-168	PDP-11 Program to Load Card Output Produced by the Wang IBM 370/PDP-11 Cross Assembler and Linker
11-169	Tri-Data Paper-Tape PAL-11A Assembler
11-170	DOS/RT11 9-track Magtape Generate/ Read Programs for UNIVAC
11-171	DEAS
11-172	RTDOS
11-173	Moonlander (LEM)
11-174	STAR-TREK (SPACWR)
11-175	DC.MAC - RC Disk Driver for RT11
11-176	RUN.MAC/SSWTCH.MAC
11-177	PARITY.MAC - High Speed Even (Odd) Parity Paper Punch Driver
11-178	CDA - Crash Dump Analyzer
11-179	Fast Fourier Transform Routine
11-180	CAREERS

DECUS NO.	TITLE
11-181	Modification of the RT-11 General Terminal Handler to Simulate Hard Copy Form Control
11-182	Modifying RT11 V02-01 to Run on an RC Disk as System Device
11-183	LPS-11 IOX Package
11-184	KB.MAC Non-Console Teletype Driver for RT-11
11-185	Gradient-Scintigraphy
11-186	Absolute Loader for DOS, RT-11 and RSTS
11-187	TAXRTN - Canadian Individual Income Tax Return
11-188	Forms-Control Simulation for DECwriters and Teletypes
11-189	FFTSC - 16-Bit Complex FFT
11-190	ISNCS2 and IQSIN2 - 16-Bit Trigonometric Functions
11-191	ISNCS4 and IQSIN4 - 16-Bit Trigonometric Functions
11-192	SPACE WAR
11-193	TERM.MAC - Terminet Device Driver for PDP-11/20, DOS V8.02
11-194	KA - The Small Console Driver
11-195	PCP-11/MFT-11, DOS Timesharing and Catalogued Procedures
11-196	REDISK - DOS File-Structure Rebuilder
11-197	FFT Demonstration Package
11-198	MEMSEG - A 4K-123K Bank-At-A-Time PDP-11 Memory Diagnostic
11-199	SYSMAC.THM
11-200	DIBOL Translator
11-201	PAL-8,11 - A PDP-8 Assembler Implemented on a PDP-11
11-202	EDITX - An Improved DOS EDIT
11-203	FORM - A Formatter for MACRO Source Code
11-204	MFT Utility Package
11-205	Core Only - RSX-11M, Version 1
11-206	DSKPAT
11-207	MRMLIB
11-208	BIOMAC - Macros for Structured Programming in MACRO
11-209	RX11 Floppy Utility
11-210	Everhart Collection on Magtape
11-211	PLOT - Digital Incremental Plotter Software Package

DECUS NO.	TITLE
11-212	TECO - Text Editor and Correction for RSX-11D, Version 6A
11-213	LIB.FOR - Library Routines
11-214	RENUM - FORTRAN Renumbering Program
11-215	TRACE.MAC/TR.MAC
11-216	FORMAT - DECtape Formatter for RT-11
11-217	LP.MAC - A Handler for Use With an A. B. Dick Videojet Line Printer Under RSX-11D
11-218	A Device Handler and Plotting Package for Houston Instrument DP1-Plotter Under RSX-11D
11-219	PTHEAD - Paper Tape Heading Program
11-220	PICT - Machine Code Tester
11-221	ODT11T - RT11 ODT with TRACE Feature Added
11-222	RUNOFF, V6A
11-223	DOSLST - DOS Directory/File Lister
11-224	MPS Cross Assembly Programs for RT11
11-225	GT40 Graphics Utility Routines
11-226	RO.MAC - MT ROLLIN File Device Driver
11-227	TAGFIL.FTN - Directory Annotation Program for DOS and RT11
11-228	Contour Plotting Program
11-229	INDEX - FORTRAN Cross Referencing Program
11-230	RMDEMO
11-231	ALGOL, RT11
11-232	FORTH Programming System for the PDP-11
11-233	A Modified IOX for Handling More Than One Terminal
11-234	MUD11
11-235	CYCLES
11-236	SOTS - Small FORTRAN OTS for RSX

DECUS NO. 11-63E.a (Continued)

Minimum Hardware:	8K PDP-11, ASR33, TM11, one to eight TU1Ø's, PC11 optional
Other Programs Needed:	IOXMTA (DECUS NO. 11-63B.a)
Restrictions:	Magtape write error recovery does not work for the first word of a file
Source Language:	PAL-11A

DECUS NO. 11-63F.a

PAL-11M - Magnetic Tape Absolute Assembler

James W. Brown, Space Radiation Lab., California Institute of Technology, Pasadena, California

PAL-11M is an extension of the DEC PAL-11A absolute assembler. It has the capability of assembling source code from magnetic tape, and can produce any or all of its outputs (binary, listing, symbol table) on magtape as well. Output may be loaded by SRLSYS or LOAD-11M.

Minimum Hardware:	12K PDP-11, ASR33, TM11, one to eight TU1Ø's, PC11 optional
Other Programs Needed:	IOXMTA (DECUS NO. 11-63B.a)
Restrictions:	1257 (decimal) user symbols in 12K version; no line printer in IOXMTA
Source Language:	PAL-11A

DECUS NO. 11-63G.a

PAL-11MR - Magnetic Tape Relocatable Assembler

James W. Brown, Space Radiation Lab., California Institute of Technology, Pasadena, California

PAL-11MR is an extension of the DEC PAL-11S relocatable assembler. It has the capability of assembling source code from magnetic tape, and can produce any or all of its outputs (binary, listing, symbol table) on magtape as well. Output must be linked by LINK-11M.

Revisions to this program are indicated in the 11-63A.a write-up.

Minimum Hardware:	12K PDP-11, ASR33, TM11, one to eight TU1Ø's, PC11 optional
Other Programs Needed:	IOXMTA (DECUS NO. 11-63B.a)
Restrictions:	945 (decimal) user symbols; no line printer in IOXMTA
Source Language:	PAL-11A

DECUS NO. 11-63H.a

LINK-11M

James W. Brown, Space Radiation Lab., California Institute of Technology, Pasadena, California

LINK-11M is an extension of the DEC program LINK-11S, which is used to relocate and link object modules produced by the PAL-11MR or PAL-11S relocatable assemblers. Input may be any mixture of paper tape and consecutive or non-consecutive magnetic tape files. Output may be paper tape or magnetic tape.

Revisions to this program are noted in the 11-63A.a write-up.

Minimum Hardware:	12K PDP-11, ASR33, TM11, one to eight TU1Ø's, PC11 optional
Other Programs Needed:	IOXMTA (DECUS NO. 11-63B.a)
Restrictions:	Must be reassembled to change memory size
Source Language:	PAL-11A

DECUS NO. 11-63I.a

LOAD-11M - Magnetic Tape Absolute Loader

James W. Brown, Space Radiation Lab., California Institute of Technology, Rasadena, California

LOAD-11M reads formatted binary records from magnetic tape produced by PAL-11M or LINK-11M and loads data into memory in any locations not occupied by itself. The tape file desired is selected via the switch register. The function of LOAD-11M is similar to that of the absolute loader. It is position independent and must be relocated by the Absolute Loader.

Minimum Hardware:	PDP-11, ASR-33, TM11/TU1Ø
Other Programs Needed:	DEC Paper Tape Absolute Loader
Restrictions:	Uses Tape Unit 1. Maximum record size is 56Ø octal
Source Language:	PAL-11A

DECUS NO. 11-63J.a

7 track magtape containing source code for all programs in the SRL-PDP-11 Magnetic Tape Operating System may be ordered under this number.

DECUS NO. 11-63K.a

9 track magtape containing source code for all programs in the SRL-PDP-11 Magnetic Tape Operating System (Release 2) may be ordered under this number.

DECUS NO. 11-64a

DOS VERSION OF BASIC

Peter J. Moylan & F. C. P. Huang
University of Newcastle, Australia

Implements a superset of PDP-11 BASIC to run under DOS. Extensions to the language include plotting commands for visual display and incremental plotter.

Minimum Hardware:	Any DOS config. with at least 12K of core, EAE or EIS and DECtape
Other Programs Needed:	PDP-11 DOS Monitor. FORTRAN Library is highly desirable
Storage Requirement:	Uses all available core
Restrictions:	One user only
Source Language:	PAL-11R

DECUS NO. 11-65

EDUALO - RKØ78

N. C. S. Long, Hawker Siddeley Aviation, Ltd., Kingston-Upon-Thames, Surrey, England

This version of EDU70 Multi-user BASIC can be loaded under DOS and allows free core to be allocated to users in the ratio specified by the initial dialogue.

Minimum Hardware:	8K Paper Tape or 12K DOS System
Miscellaneous:	Currently this program uses EDU70 VØØ2A
Source Language:	PAL 11

DECUS NO. 11-66

PALDMP. KØ42

N. C. S. Long, Hawker Siddeley Aviation, Ltd., Kingston-Upon-Thames, Surrey, England

This program dumps the core memory in PAL11 mnemonic assembly language form. The program is relocatable and used as DEC's Teletype Octal Dump. The resulting output can be reassembled by the PAL11 assembler.

Minimum Hardware:	4K PDP-11, ASR33
Restrictions:	No non-existant memory protection
Source Language:	PAL11

DECUS NO. 11-67

EBCDIC TO ASCII MAGTAPE CONVERSION

Chuck Forsberg, TEKTRONIX (IDP) Inc., Beaverton, Oregon

Translates EBCDIC tapes (card image format) to ASCII. Provides for card deck label selection and suppression of deck labels and trailing spaces.

Minimum Hardware:	8K PDP-11 DOS 9-track TM-11
Associated Documents: (Not supplied by DECUS)	IBM 360 Reference Data Dard; Memorandum to Recipients of System/360 Scientific Subroutine Package
Restrictions:	Editing function not valid if line length is not 80 characters
Source Language:	PAL11R

DECUS NO. 11-68

ALGEBRA - A Program for Manipulating Logical Expressions

P. J. Brown and R. C. Saunders, University of Kent at Canterbury, Canterbury, Kent, England

ALGEBRA allows the user to declare a set of objects and then to define a number of operators that can be applied to these objects. The objects are called values. Once the operators and values have been defined the user can investigate their properties by evaluating expressions involving variables, operators and values.

Minimum Hardware:	PDP-11
Other Programs Needed:	DOS
Storage Requirement:	2.5 K words + data storage
Source Language:	PAL-11

DECUS NO. 11-69

ML/I Macro Processor

P. J. Brown; DOS11 Implementation by R. C. Saunders, University of Kent at Canterbury, Canterbury, Kent, England

ML/I is a general purpose macro processor. It can process any kind of text. It provides the user with a simple means of adding extra statements to an existing programming language to make the language more suitable for his own field of application. Other uses of ML/I are program parameterization, text editing or correction, and data format conversion.

Minimum Hardware:	PDP-11
Other Programs Needed:	DOS
Storage Requirement:	7.6 K words plus data storage
Source Language:	PAL-11

DECUS NO. 11-70a

DOS BASIC, Version 2A

George Shering, CERN
Revised by: G. Shering and G. Everhart, Massachusetts Institute of Technology, Cambridge, Massachusetts

Single user BASIC has been implemented to run under DOS. Programs may be OLDed, SAVEd, or RUN from any DOS dataset. Provision for binary or ASCII I/O has been incorporated, logical operations on integers are supported, and extensive support for user written functions (in MACRO) callable from BASIC has been added. The full range of DOS CTRL-C commands is supported.

Monitor/Operating System:	DOS-11
Core Storage Required:	8K or more
Source Language:	PAL-11R

name, I/O usage, and event flags are also output.

STATUS differs from the DEC-supplied ACT function in that only one task status is listed and the output format is more readable.

C. File Change Program - This program allows alterations to the contents of a file one word at a time. Data may be input in octal, decimal, ASCII, or as Radix-50 characters. The program has a special mode for patching task-image files, that allows the user to address task virtual addresses and not be concerned with file headers or block boundaries. (However, the program does not properly address overlays.)

Minimum Hardware: PDP-11, RSX-11D
Source Language: MACRO-11

DECUS NO. 11-158

STAGE2 For The PDP-11

W. M. Waite, University of Colorado. DOS-11 Implementation by Peter H. Heinrich, University of Karlsruhe, Inst. f. Biokybernetic, D-75 Karsruhe, Germany

STAGE2 is a general purpose macro processor similar to ML/1 (DECUS NO. 11-69). The features are described in William M. Waite's book "Implementing Software for Non-numeric Applications," Prentice-Hall, N. J., 1973.

Minimum Hardware: PDP-11/20+ EAE, PDP-11/40 + EIS or PDP-11/45
Other Programs Needed: DOS-11
Storage Requirement: Uses all core available
Source Language: MACRO-11

DECUS NO. 11-159

READID.MAC

Paul Koning
Submitted by: Michael Hall, Lawrence University, Appleton, Wisconsin

This program reads the ID of any RK05 disk pack. It is useful if the physical label on the outside of the pack becomes lost or unreadable and allows you to know the ID of a pack in order order to mount it.

See ordering information under RSTS11-36

DECUS NO. 11-160

BLISS-11

Carnegie-Mellon University, Wulf, et al
Submitted by: Stephen Lieman, Digital Equipment Corporation, Maynard, Massachusetts

The BLISS-11 compiler is a highly optimizing cross-compiler developed at Carnegie-Mellon University by Wulf, et al. Written in BLISS-10, it runs on the DECsystem-10 and outputs assembler code for the PDP-11.

The BLISS-11 language is a typeless, goto-less, machine-dependent language which has been found to be most useful for system implementation purposes.

The revised BLISS-11 Programmer's Manual reflects the current state of the language and the compiler. It represents a substantial improvement over the preceding version of the manual, and it corresponds closely to the current compiler.

See ordering information under 10-213.

DECUS NO. 11-161

1401 Simulator

Edward Geigler, Carleton College, Northfield, Minnesota
Submitted by: Alice Peters, Digital Equipment Corporation, Maynard, Massachusetts

The 1401 Simulator runs 1401 programs on the PDP-11. The maximum 1401 machine configuration which can be simulated is: 16K 1401 with Sense Switches B-G, high-low equal compare, indexing, modify address, start A and B-address registers, move characters to record-mark or group-mark-wordmark, scan disk and direct seek, 1402 card reader/punch, 1403 line printer, 1407 console inquiry station, and up to five 1311 disk drives.

Source Language: MACRO-11

DECUS NO. 11-162

CHSSLV: A CHESS-PROBLEM SOLVER

Ir. R. C. Van Der Eijk, Hogere Technische School, Heerlen, The Netherlands

This program solves chess problems. White checkmates black in 2 or 3 moves.

Castling and "En Passant" are forbidden moves.

Minimum Hardware: 8K PDP-11, TTY, DECtape
Other Programs Needed: RT-11
Source Language: MACRO-11

DECUS NO. 11-163

RSX-11D TECO & RSX-11M TECO

Hank Krejci, Digital Equipment Corporation, Maynard, Massachusetts and Willima H. Brown, Digital Equipment Corporation, Blue Bell, Pennsylvania

TECO is a powerful text editing and correcting program that runs under the RSX-11D/RSX-11M operating systems. TECO may be used to edit any form of ASCII text such as program listings, manuscripts, correspondence and the like. Since TECO is a character-oriented editor rather than a line editor, text edited with TECO does not have line numbers associated

DECUS NO. 11-163 (Continued)

with it, nor is it necessary to replace an entire line of text in order to change one character.

RSX-11M is compatible with RSX-11D except that a Control A is used instead of RUBOUT and a Control W instead of Control U.

Note: Several features of RSX-11D TECO fail to operate correctly when the multi-TTY handler is employed. All features operate correctly with the single-TTY handler.

Minimum Hardware:	RSX-11D Configuration
Storage Requirement:	Selectable at TASBUILD
Source Language:	MACRO-11

DECUS NO. 11-164

Clock Generator

Mike Rudnick, Tektronix, Inc., Beaverton, Oregon

The Clock Generator is a group of routines which allow for convenient and flexible use of the PDP-11 line frequency clock. Clocks generated by the Clock Generator may be thought of as self-resetting alarm clocks.

Minimum Hardware:	PDP-11, line frequency clock
Source Language:	MACRO-11

DECUS NO. 11-165

MR11DX

David T. Boylan, ELS Systems Engineering, East Cleveland, Ohio

MR11DX is an extended version (cassette boot included) of the MR11DB hardware ROM boot loader. It is intended for use in systems which have occasion to boot from many devices but do not have the hardware version; it can also be used in conjunction with the paper tape ROM boot loader to save cost and card space.

Storage Requirement:	1/2K
Source Language:	MACRO-11

DECUS NO. 11-166

CILINK - A Swapping Overlay Loader

R. N. Stillwell, Baylor College of Medicine, Houston, Texas

CILINK is a FORTRAN-compatible swapping overlay loader which will run on a PDP-11/40 or PDP-11/45 under PDP-11 DOS V.08 or V.09. It allows an overlay to call another overlay into its own memory space, without losing the values of its local variables. It also allows recursive calls. The RK11 is a required peripheral.

Other Programs Needed:	LINK V.11, CILUS
Storage Requirement:	1362 bytes (total)
Restrictions:	Not compatible with new LINK
Source Language:	MACRO

DECUS NO. 11-167

Real Time EXF for Single User BASIC

Stephen E. Edgell, University of Louisville, Louisville, Kentucky

External event control and data recording are facilitated for the PDP-11 Single User BASIC paper tape software. The control of one DR11C interface is supported. Timing control including delaying of execution and recording of external latencies are supported by version 1 using the line frequency clock and by version 2 using the programmable real time clock. User programming is in BASIC with function references to this EXF for real time actions.

Minimum Hardware:	PDP-11, DR-11C, clocks as stated in abstract
Other Programs Needed:	Paper tape software loader and assembler - DEC-11-L2PC-PO; DEC-11-UPLAA-A-PB Single User BASIC -DEC No. LIBKIT-11
Storage Requirement:	8K
Source Language:	PAL-11A

DECUS NO. 11-168

PDP-11 Program to Load Card Output Produced by the Wang IBM 370/PDP-11 Cross Assembler and Linker

E. H. Spencer, Exxon Company, Baton Rouge, Louisiana

The Wang 370/PDP-11 Cross Assembler and Linkage Editor, when assembling and linking PDP-11 programs on an IBM 370 computer, punches a PDP-11 object module to cards in the Absolute Binary Loader (V006A) format. This DECUS Library entry provides a bootstrap and a modification of the DEC Absolute Binary Loader (V006A) to allow the Documation 300 card reader to read and store these load modules to PDP-11 memory.

Restrictions:	Not relocatable, but can be changed for different core sizes

DECUS NO 11-169

Tri-Data Paper-Tape PAL-11A Assembler

Jack R. Ellis, Tri-Data Corporation, Mountain View, California

This program is a revised paper-tape PAL-11A assembler for PDP-11 computers. Additional features include true double-buffering of source, binary, and listing data for maximum throughput; 11/40 and 11/45 extended instruction handling; line-printer listing output; and a wide-line listing format that allows multiple-word instructions to be printed on one line. This assembler operates in 4K to 28K of memory and handles up to 7000 symbols.

Peripherals:	ASR-33. Supports high-speed reader/punch, line-printer
Source Language:	PAL-11A

DIGITGRAPH
P. O. Box 4210
Tucson, Arizona 85717

DECUS NO. 11-202

EDITX - An Improved DOS EDIT

D. Nelson
Submitted by: G. Everhart, M.I.T., Cambridge, Massachusetts

EDITX is a version of EDIT-11 which has a substitute command allowing one to replace a string without counting characters. It looks like

z/hello/goodbye/

and will in that case find "hello" and replace it with "goodbye". It has the ability to accept lower-case commands, and has a few other utility commands in addition to all EDIT-11 commands. (It is about the same as V7 of EDIT otherwise.)

Minimum Hardware:	DOS-11
Source Language:	MACRO-11

DECUS NO. 11-203

FORM - A Formatter for MACRO Source Code

G. Everhart, M.I.T., Cambridge, Massachusetts

FORM is a program which takes MACRO source code and puts tabs at the start of each line and between opcode and arguments. It uses a PIP-like command string -- 2 files. It will make MACRO code punched on cards look good and even.

Minimum Hardware:	DOS-11
Source Language:	MACRO-11

DECUS NO. 11-204

MFT Utility Package

G. Everhart, M.I.T., Cambridge, Massachusetts

A system status report program is provided which, running under MFT-11, will report who is using the system and what their terminals are, and how much core is allocated to the user. This is for people timesharing with two widely separated terminals.

A pair of programs and examples of matching catalogued procedures for inter-partition communications of commands is provided. These enable one partition to submit jobs to the other to be done while the submitting partition does its own jobs. (This is designed for single-terminal systems.)

Minimum Hardware:	DOS-11/MFT-11
Other Programs Needed:	MFT-11 (DECUS NO. 11-195)
Restrictions:	Will not work under DOS. Inter-task message sender is restricted to sending from low to high partition
Source Language:	MACRO-11

DECUS NO 11-205

Core-Only RSX-11M, Version 1

John Sutherland, Digital Equipment Corporation, Maynard, Massachusetts

This set of 22 files allows a present user of RSX-11M BLØ8 to generate a core-only executive. Transfer media is three TA11 cassettes. The cassette files are used to replace standard RSX-11M SYSGEN files on the host disk-based system on which the sysgen must be done. The sysgen is done in a manual mode (rather than via the indirect files) according to cook-book operator procedures supplied and requires a minimum 24K system.

CAUTION!! The user should know PDP-11s and RSX-11M well before he tries this technique. Even with the cook-book instructions there are subtle aspects of this systen that require in-depth user knowledge.

Minimum Hardware:	PDP-11, 2 RK05, LA36, TA11
Other Programs Needed:	RSX-11M BLØ8 V1
Storage Requirement:	24K
Restrictions:	Persons requesting these files must enclose proof of an RSX-11M license, or be DEC personnel.
Source Language:	MACRO-11

DECUS NO. 11-206

DSKPAT

J. E. Pollack and G. C. Everhart, Massachusetts Institute of Technology, Cambridge, Massachusetts

DSKPAT is a revision of DPEEK with one simple addition. It is a simple disk patcher for use under DOS-11 allowing inspection and patching in octal, RAD50, or ASCII and able to be used in a batch environment. It follows the same conventions as DPEEK, but will type out one word's contents if the word number followed by a colon is typed. All other DPEEK commands are preserved.

Minimum Hardware:	DOS-11
Restrictions:	Must assign any disk to be patched to logical name "DSK" unless device is SYØ:
Source Language:	MACRO-11

DECUS NO. 11-207

MRMLIB

Dr. M. R. Manning, Institute of Nuclear Sciences, Lower Hutt, New Zealand

MRMLIB is a personal collection of subprograms which can be called by FORTRAN programs and which can also be written in FORTRAN. The principal aim in setting up this library has been to establish a reasonably portable set of subprograms which carry out operations that would otherwise be continually rewritten. Thus, many of the routines in this library perform simple (even trivial) tasks. Two strong secondary aims are to establish a standard set of interfaces which are inherently more portable than the routines, and to establish proven subprograms for non-trivial operations particularly in the numerical area.

No guarantee as to the correctness or efficiency of any routine can be given but generally the routines will have been used to a degree that should allow some confidence in them.

Other Programs Needed: RT-11 FORTRAN
Source Language: RT-11 FORTRAN

DECUS NO. 11-208

BIOMAC - Macros for Structured Programming in MACRO

Scott Herman-Giddens, Duke University, Durham, North Carolina

BIOMAC is a set of PDP-11 macro skeletons which may confer a block structure on MACRO programs, enabling structured programming. They include provisions for selective (IF...ELSE...END, for example) or repetitive (WHILE, REPEAT, etc.) block execution, execution of blocks as subroutines, and verification and debugging.

Other Programs Needed: DOS V8.02 or later, MACRO VRØ5A
Storage Requirement: 16K
Source Language: MACRO

DECUS NO. 11-209

RX11 Floppy Utility

Kay Fisher, Digital Equipment Corporation, Maynard, Massachusetts

This program will copy or scan RXØ1 floppy disks assigned to Unibus address 177170 to 177172 only.

Minimum Hardware: RX11 floppy disk system
Storage Requirement: 8K
Source Language: PALX11

DECUS NO. 11-210

Everhart Collection on Magtape

Glenn C. Everhart, Massachusetts Institute of Technology, Cambridge, Massachusetts

This package contains a collection of programs submitted to DECUS in the past on DECtape or paper tape. The author has resubmitted them on a 9-track, 1200 ft. magtape for the convenience of those who do not have DECtape. Some programs are given as source code here, which were given as object code previously, and some programs are new versions not available on other media. It is suggested that individual write-ups be ordered for the specific programs desired.

Among the programs in the package are: 11-70; 11-106; 11-156; 11-171; 11-172; 11-195; 11-196; 11-202; 11-203; 11-206.

Minimum Hardware: DOS-11 Operating System

DECUS NO. 11-211

PLOT - Digital Incremental Plotter Software Package

Jeffrey Kodosky, Applied Research Labs., University of Texas, Austin, Texas

This plot package consists of five MACRO-11 source modules containing FORTRAN callable routines which implement plotting operations on a Digital Incremental Plotter. A FORTRAN source tape for a demonstration program is also included. The subroutines in the foundation module handle interrupt driven vector plotting, origin resetting, vector scaling, dotted line plotting, and Y-motion limiting to prevent loss of origin. In addition, a subroutine is provided which will implement a circular buffer to buffer the plot vectors. The other modules contain utility subroutines which call the subroutines in the first module. A small lettering routine containing 64 characters is provided for use where core space is restricted. A more sophisticated symbol plotting subroutine exists which has a 157 character repertoire and is expandable to many times that number. It presently contains upper and lower case Roman and Greek alphabets and standard math symbols. An axis plotting subroutine is included which will plot a linear or logarithmic coordinate axis at an arbitrary angle.

Minimum Hardware: PDP-11 with DIGITAL Incremental Plotter
Other Programs Needed: FPMP or FORTRAN Library Routines
Storage Requirement: 760 words minimum, 2900 words maximum
Source Langauge: MACRO-11

DECUS NO 11-212

TECO - Text Editor and Correction for RSX-11D, Version 6A

Hank Krejci, Digital Equipment Corporation
Revised by: Andrew Goldstein, Digital Equipment Corporation, Maynard, Massachusetts

This TECO package consists of four files that have been recorded via RSX-11D filex in DOS format. The four files are:

TECO.RNO - The RUNOFF source for the TECO manual
TECBLD.CMD - TKB command file to build Task
TECO.OBJ - Object module for body of editor, and
TECOIO.OBJ - Object module for RSX-11D I/O section

Note: These object files are for RSX-11D V6A only. They will not build correctly under previous versions of RSX-11D. (See DECUS 11-163 for previous version.)

Other Programs Needed:	RSX-11D V6A (DEC No. QJ580-AD)
Source Language:	MACRO-11

DECUS NO. 11-213

LIB.FOR - Library Routines

David Sykes, Mead Technology Laboratories, Dayton, Ohio

LIB.FOR is a concatenated series of FORTRAN source modules for a variety of useful utility routines. They are intended to be built into the user library, although they can be separated out into separate subroutines. SORTR, SORTI, SORTB, and SORTW are a series of similar routines which provide very rapid sorts of arrays of real numbers, intergers, byte ASCII characters, and word ASCII characters (A1), respectively. They all use the monkey puzzle tree sort technique. SHELL and SHELLR are a pair of relatively fast in-place sort routines for integers and real numbers, respectively. All sort routines can also be used under DOS. CAD is a subroutine which implements the CAD function of the VT05 terminal, allowing the program to place the cursor anywhere on the screen. JDATE, KDATE, and LDATE provide manipulation for a Julian date in the same format that DOS uses; this is more useful for many purposes than the standard RT11 system date word.

Minimum Hardware:	Minimum for RT-11
Other Programs Needed:	RT-11, V2B; SYSLIB
Source Language:	FORTRAN

DECUS NO. 11-214

RENUM - FORTRAN Renumbering Program

David Sykes, Mead Technology Laboratories, Dayton, Ohio

RENUM is intended to provide two useful services for the FORTRAN programmer: (1) Replace the existing statement numbers (labels) with a new (and equivalent) series of sequential numbers, and (2) produce a cross-reference table of all the variable names used in the source file showing all line numbers where each occurs. Either or both of these services along with a listing of the source code can be produced. The two functions are completely independent. Control is by means of terminal-entered command strings following the standard RT11 rules. Input files (up to 6 per command line) can be on any disk device and output files can be directed to any device. When renumbering, a new disk file is created with the renumbered source code and the original source file is changed to .OLD. The line numbers used for cross-referencing the variable names agree with those on a compiler-generated listing. RENUM runs only under RT11 version 2B and requires SYSLIB.

Minimum Hardware:	Minimum for RT-11, plus a disk
Source Language:	FORTRAN

DECUS NO. 11-215

TRACE.MAC/TR.MAC

Michael N. LeVine, Naval Weapons Center, China Lake, California

TRACE/TR are meant as debugging tools for writing assembly language programs. When implemented and directed to do so, either program will, upon completion of execution of an instruction in a section of code being traced, print out the location in memory of that instruction, its mnemonic and arguments as well as the contents of all registers and memory locations referred to. They then return to the traced program for the next instruction. The resulting output is a listing of exactly what instructions were executed and what happened because of it.

TRACE.MAC is a subroutine that must be linked in with the program to be traced and be initialized by it.

TR.MAC is a pseudo device driver that is assembled and linked to TR.SYS, entered into the monitor device driver tables. The user does not have to link it into the main program each time.

Both versions can be modified to direct their output to the LP: rather than the console device.

Monitor/Operating System:	RT-11 V2
Other Software Required:	RT-11
Source Language:	MACRO

DECUS NO. 11-216

FORMAT - DECtape Formatter for RT-11

David Ofsevit, U. S. Department of Transportation, Cambridge, Massachusetts

This program is the standard PDP-11 DECtape formatter TOG-11, modified to run under RT-11. It makes formatted DECtapes on unit 7 with a standard format of 578_{10} blocks of 256_{10} words each.

Monitor/Operating System:	RT-11
Hardware Required:	DECtape control and transports
Source Language:	MACRO

DECUS NO. 11-217

LP.MAC - A Handler for Use With an A. B. Dick Videojet Line Printer Under RSX-11D

T. J. Kuriakose and W. F. Edgell, Purdue University, West Lafayette, Indiana

This LP handler for the A. B. Dick Videojet Line Printer for the RSX-11D system runs under interrupt and is useful for all general purposes. It can easily be incorporated into the system by installing after assembling and task building. The interface is available from A. B. Dick.

Monitor/Operating System:	RSX-11D
Core Storage Required:	414 words
Hardware Required:	PDP-11/45
Source Language:	MACRO-11

DECUS NO. 11-218

A Device Handler and Plotting Package for Houston Instrument DP1-Plotter Under RSX-11D

T. J. Kuriakose and W. F. Edgell, Purdue University, West Lafayette, Indiana

These are routines for basic scientific plotting with a Houston Complot (DP1) plotter and the PDP-11/45 under the RSX-11D system. They consist of a device handler and a plotting package. The routines are callable either from FORTRAN or assembly language programs. Although the programs are written for a specific interface they are readily adaptable to any other. The documentation describes the basic action of each of the ten modules.

Monitor/Operating System:	RSX-11D
Core Storage Required:	1595 words
Hardware Required:	PDP-11/45; Houston Complot (DP1) Plotter
Other Software Required:	FORTRAN Modules: $POLSH, $MLR, $RI + FCO, $ECO, $GCO
Source Language:	MACRO-11

DECUS NO. 11-219

PTHEAD - Paper Tape Heading Program

John Steiert, University College of Wales, Aberyswyth, DYFED, Wales

This program punches legible headings on paper tape in response to characters typed at the teletype. The full ASCII (1968) character set is defined.

Monitor/Operating System:	DOS/BATCH 11
Core Storage Required:	4K
Hardware Required:	PDP-11, Teletype, Papertape punch
Source Language:	MACRO-11

DECUS NO. 11-220

PICT - Machine Code Tester

John Steiert, University College of Wales, Aberyswyth, DYFED, Wales

This program allows octal machine code instructions to be typed in at the keyboard. The user can then execute his program at a selected address. Illegal and reserved instructions are trapped. At the end of the text the stack is checked.

It is particularly useful for testing small sections of position independent code.

Monitor/Operating System:	DOS/BATCH 11
Core Storage Required:	12K
Hardware Required:	PDP-11, TTY
Source Language:	MACRO-11

DECUS NO. 11-221

ODT11T - RT11 ODT with TRACE Feature Added

Michael N. LeVine, Naval Weapons Center, China Lake, California

ODT11T is an extension of RT11 ODT (DEC-11-ORODA-D) adding the ability to trace any section of code in which the user is interested. The trace feature, called by the instruction N;T, outputs the location of each instruction executed, its mnemonic, and the contents of all registers, accumulators and memory locations referenced.

Monitor/Operating System:	RT11
Core Storage Required:	4K
Source Language:	MACRO

DECUS NO. 11-222

RUNOFF, V6A

Digital Equipment Corporation, Maynard, Massachusetts

RUNOFF is a PDP-11 program running under RSX to facilitate the preparation of typed or printed manuscripts, such as memos, manuals, etc. The user prepares his material on any regular PDP-11 terminal, and writes it onto a file using EDIT-11. The user includes not only testual material, but also case and formatting information. RUNOFF then takes the file and reproduces in onto the line printer, teletype or other file to produce a final copy or final file image. It performs the formatting and case shifting as directed, and will also perform line justification, page numbering and titling, etc., as desired.

The principal benefit of such a program is that files prepared for use with it may be edited and corrected easily. Small or large amounts of material may be added or deleted, and unchanged material need not be retyped. After a set of changes, the program may be operated to produce a new

DECUS NO. 11-222 (Continued)

copy which is properly paged and formatted. Documentation may thus be updated as necessary without requiring extensive retyping.

Monitor/Operating System: RSX-11D
Source Language: MACRO-11

DECUS NO. 11-223

DOSLST - DOS DIRECTORY/FILE LISTER

G. Everhart and T. Lagerlund, Massachusetts Institute of Technology, Cambridge, Massachusetts

DOSLST is a program to list DOS files and directories from DOS-Format disks. It differs from PIP in that its directories are in a two-column format and contain information about the file locations on disk, and in that it supports the use of ? as a wild-card character in addition to the use of * in specifying wild-card files. It can list files on any DOS disk, outputting to any DOS dataset. But, defaulting to LP: it will not correctly transfer binary files. However, it writes entirely in formatted ASCII mode.

Monitor/Operating System: DOS-11
Core Storage Required: 2 1/2 K
Hardware Required: DOS-11 configuration
Source Language: MACRO-11
Restrictions, Deficiencies, Problems: Lists only on disks - not on magtape or DECtape

DECUS NO. 11-224

MPS Cross Assembly Programs for RT-11

Robert Tedford, Digital Equipment Corporation, Marlboro, Massachusetts

This is a set of programs written in FORTRAN and MACRO which allows the user to assemble and execute programs written for Digital's 8008 Microprocessor. The package includes an assembler, cross-reference program, simulator and binary punch program.

Monitor/Operating System: RT-11
Core Storage Required: 16K
Hardware Required: DECtape or Disk pack
Other Software Required: RT-11 FORTRAN
Source Language: FORTRAN and MACRO
Restrictions, Deficiencies, Problems: Maximum size program that is supported by the simulator is 8K

DECUS NO. 11-225

GT40 Graphics Utility Routines

Rex Tracy, Colorado State University, Fort Collins, Colorado

This set of programs provides the GT40 user a method of obtaining a hard copy of the information (plots) currently on the screen. A subroutine interprets the GT40 display code and produces commands to an incremental plotter interfaced to the GT40. A driver routine is provided to use the GT40 as an X-Y plotter. An external function for use with BASIC in another PDP-11 will provide graphical output from BASIC programs. Test programs are provided for all routines.

Minimum Hardware: PDP-11/GT40 or PDP-11/20, DL11E and an incremental plotter interfaced to the GT40
Other Programs Needed: BASIC V007A
Storage Requirement: 8K GT40 and 8K 11/20
Restrictions: Display stop instruction not interpreted, character mode not available on plotter, line types not implemented for plotter
Source Language: PAL-11 and BASIC

DECUS NO. 11-226

RO.MAC - MT ROLLIN File Device Driver

Michael N. LeVine, Naval Weapons Center, China Lake, California

RO.MAC is a magtape device driver that allows the user to access one disk rollout on a magtape containing any number of rollouts and treat the file as if it were a file structured device. The specified rollout file is then the pseudo disk RO:; available to the user for any operation that does not involve writing on the magtape (RO:).

Minimum Hardware: PDP-11, TU10/TM11
Other Programs Needed: RT-11 V2/V2B
Storage Requirement: 4.4K for handler
Restrictions: Read only
Source Language: MACRO

DECUS NO. 11-227

TAGFIL.FTN - Directory Annotation Program for DOS and RT11

Robert Wells and Robert Feinstein, Marine Biomedical Institute, University of Texas Medical Branch, Galveston, Texas

This program is used for maintaining file documentation in the form of annotated and updatable disk file directories. It requests from the user the names of three files:

(1) Old tagged directory - This is a directory previously created by this program which one wishes to update (or if creating a new tagged file, this can be most anything).

Previously assigned tags are transferred from here to the new tagged directory

(2) PIP Directory - This is a disk directory produced by PIP. This directory is used to update the old tagged directory by reflecting added or deleted files and newer versions of old ones.

(3) New Tagged Directory - This is the updated tagged directory produced by TAGFIL.

For every file in the PIP directory, the old tagged directory is searched. If a tag exists for the file, it is copied into the new tagged directory. If not, a tag for the file is requested from the terminal.

Modifications to old tags and similar operations can best be performed using EDIT.

Minimum Hardware:	PDP-11, RK05
Other Programs Needed:	DOS 9-20c and RT-11, FORTRAN IV
Source Language:	FORTRAN IV

DECUS NO. 11-228

Contour Plotting Program

Rajesh Motwani, Marine Biomedical Institute, Galveston, Texas

This program plots contours in two dimensions X, Y for several values of the third independent variable Z. The data for which contours are to be plotted is assumed to be a discrete tabulation of a single value function.

$$Z = F(X,Y)$$

The program works on a Gould 5000 Printer/Plotter, but could be easily modified to work on any plotter.

Minimum Hardware:	PDP-11/45, disk, high speed reader/punch, Gould 5000 Printer/Plotter
Other Programs Needed:	Gould Plot Library Routines, DOS/BATCH
Storage Requirement:	32K or more
Source Language:	FORTRAN IV

DECUS NO. 11-229

INDEX - FORTRAN Cross Referencing Program

Michael N. LeVine, Naval Weapons Center, China Lake, California

INDEX is a cross referencing program that does for FORTRAN what CREF does for MACRO. A source program run through INDEX will be checked for all of its variable name and statement label usage. The results will then be listed in alphabetical order, listing all the variable names and statement numbers used in the program, the lines on which they were used, and how they were used.

Monitor/Operating System:	RT-11
Other Software Required:	RT-11
Source Language:	MACRO

DECUS NO. 11-230

RMDEMO

Eric Baatz & Kim Kinnear, Technological Institute, Northwestern University, Evanston, Illinois

RMDEMO is an RSX-11M, V02 task that displays pertinent information about its system.

Monitor/Operating System:	RSX-11M V02 or RSX-11S V01
Core Storage Required:	Dependent on assembly options
Hardware Required:	Any PDP-11 configuration supporting RSX-11M V02 or RSX-11S V01
Other Software Required:	RSX-11M V02 or RSX-11S V01
Source Language:	MACRO
Restrictions, Deficiencies, Problems:	Must have RSX-11M license and the RSX-11M "MAPPED OBJECTS" distribution kit

DECUS NO. 11-231

ALGOL, RT11

Gregory D. Hosler, Digital Equipment Corporation, Maynard, Massachusetts

RT-11 ALGOL is a compiler and run-time system for the ALGOL-60 language which operates on 16K or larger RT-11 V02B systems.

This implementation of the ALGOL-60 language features dynamic allocation of program and data segments through a software virtual memory system. All ALGOL-60 statement components are supported, plus several extensions, such as the THRU statement, numbered and unnumbered CASE statements, and the string REPLACE and SCAN statements. Data types supported are 16-bit INTEGER, 16-bit BOOLEAN and one or two dimensional arrays (of INTEGER or BOOLEAN elements) with variable upper and lower bounds. Procedures may be typed INTEGER or BOOLEAN, or may be untyped. A Burrough-compatible implementation of string operations using pointer variables is provided.

Other features include partial word operations, bit concatenation, IF and CASE expressions of all types, record-oriented random-access and stream sequential I/O. The I/O operations read and write standard RT-11 files.

The virtual memory support, RT-11 input/output, and all other operations are handled through an interpreter which executes the code files output by the ALGOL compiler.

DECUS NO. 11-231 (Continued)

Monitor/Operating System: RT-11, V2B
Core Storage Required: 16K
Hardware Required: DECtape
Other Software Required: RT-11 Linker
Source Language: Assembler/ALGOL

DECUS NO. 11-232

FORTH Programming System for the PDP-11

H. Wayne Hammond and Martin S. Ewing, Owens Valley Radio Observatory, California Institute of Technology, Pasadena, California

FORTH is a self-contained programming system that has become popular in scientific applications requiring interactive control and data acquisition. The system supports a high-level structured language using reverse Polish notation; it contains an incremental compiler, an assembler, and a text editor. FORTH maintains a direct-access file on disk, DECtape, or pre-formatted industry magnetic tape. The programs submitted allow FORTH to be generated on an RT-11 system to run under RT-11 or to run stand-alone using disk or magnetic tape. The user may select versions that use the EIS or EAE options. A PDP-10 version (DECUS 10-241) is available.

Monitor/Operating System: RT-11 or stand-alone
Core Storage Required: 8K or more
Hardware Required: Disk, DECtape, or industry compatible magnetic tape
Source Language: MACRO-11

DECUS NO. 11-233

A Modified IOX for Handling More Than One Terminal

Rudy Krall, Jr., Honeywell, Inc., Phoenix, Arizona, and V. E. Sater, Arizona State University, Tempe, Arizona

This program is an extension of the PDP-11 IOX package originally supplied by DEC. The extension adds the capability of using a second terminal (either TTY or CRT) with all of the programming functions available for it as for the first terminal, including a separate RESTART address.

Core Storage Required: 8K
Source Language: PAL-11A

DECUS NO. 11-234

MUD11

M. L. Zimmerman, Massachusetts Institute of Technology, Cambridge, Massachusetts

This program allows users (currently only two) at different terminals to time-share a PDP-11 in a DOS-11 environment. Memory can be partitioned as desired and various PDP-11 options specified at MUD11 assembly. MUD11 allows terminal type ahead at all times and the MUD11 commands include the commonly used DOS-11 commands.

Monitor/Operating System: DOS-11, V8, V9 or V10
Core Storage Required: 16K or more to be useful
Hardware Required: Two terminal devices, real-time clock
Source Language: MACRO-11
Restrictions, Deficiencies, Problems: Has been tested only on PDP-11/20 and PDP-11/45

DECUS NO. 11-235

CYCLES

Vincent Perriello, CAM Systems, Incorporated, Waterbury, Connecticut

This program is an adaptation of RSTS11-76 by Susan Lewis. It has been rewritten for RT-11 and MU BASIC.

CYCLES formats a biorhythm chart for printing on either a user terminal or a line printer. Output may be directed to any legal RT-11 device. The output requires a wide carriage printer or terminal (such as LA36).

The biorhythms are calculated by methods which assume birth and current dates to be between January 1, 1901 and December 31, 1999.

For brevity the program always prints a 31 day chart, regardless of the actual length of the month.

Storage Requirement: 3K MU BASIC Portion and 8 blocks on device "DK:" for virtual file storage.

Monitor/Operating System: RT-11 VØ2
Core Storage Required: 16K

DECUS NO. 11-236

SOTS - Small FORTRAN OTS for RSX

W. H. Brown, Digital Equipment Corporation, Maynard, Massachusetts

This is a series of modules which, when linked with a FORTRAN (FOR) program, result in a significant reduction in program size.

I/O is limited to formatted I/O to UNIT RECORD DEVICES and QIO calls.

This is particularly intended for RSX11S but can be used for other real-time tasks where size is critical and disk I/O is not required.

Monitor/Operating System: RSX11
Hardware Required: PDP-11
Other Software Required: RSX11
Source Language: MACRO

DECUS SERVICE CHARGES

NOTE: WRITE-UP CHARGE DOES NOT APPLY WHEN CORRESPONDING MEDIA IS ORDERED

DECUS NO.	WRITE-UP	PAPER TAPE		LISTING	DECTAPE		LINCTAPE		MAGTAPE		OTHER INFORMATION
		BIN	ASCII		U/S	D/S	U/S	D/S	U/S	D/S	
11-143	$ 1.	$	$ 12.	$ 10.	$	$	$	$	$	$	
11-144	1.	2.	2.	Inc.							
11-145	1.			Inc							
11-146	1.	2.	8.	10.	8.	20.					1 DTA
11-147a	1.	8.	70.	10.	8.	20.			25.	40.	1 DTA; 1 MTA - 600'
11-148	1.		8.	Inc.							
11-149a	1.		8.	Inc.							
11-150	1.		8.	Inc.							
11-151	1.			Inc.	8.	20.					1 DTA (obj,src)
11-152	1.		8.								
11-153	1.		2.	Inc.							
11-154	1.		2.	Inc.							
11-155	1.	2.	2.	Inc.							
11-156	1.				8.	20.					1 DTA (obj,src)
11-157A,B,C	1.			Inc.					25.	40.	1 MTA - 600'
11-158	1.				8.	20.					1 DTA
11-159	See RSTS11-36										
11-160	2.										
11-161	1.				8.	20.					1 DTA
11-162	1.		8.	Inc.							
11-163	1.				8.	20.			25.	40.	1 DTA; 1 MTA - 600'
11-164	1.		2.	Inc.							
11-165	1.	2.	2.	Inc.							
11-166	1.				8.	20.					1 DTA (src,doc)
11-167	1.		8.	Inc.							
11-168	1.			Inc.							Card Deck - $20.
11-169	1.	2.	12.	20.							
11-170	1.			Inc.							Card Deck - $50.
11-171	1.		2.	Inc.							
11-172	1.		2.	Inc.							
11-173	1.	8.			8.	20.					1 DTA (src)
11-174	1.		8.	Inc.							
11-175	1.		2.	Inc.							
11-176	1.		2.	Inc.							
11-177	1.		2.	Inc.							
11-178	1.	8.	16.		8.	20.			25.	40.	1 DTA OR 1 MTA - 600'
11-179	1.				8.	20.					1 DTA (src)

INC - Included with write-up

U/S - User Supplied Tape (Certified)

D/S - DECUS Supplied Tape

For information not contained on this sheet see General Information

DECUS SERVICE CHARGES

NOTE: WRITE-UP CHARGE DOES NOT APPLY WHEN CORRESPONDING MEDIA IS ORDERED

DECUS NO.	WRITE-UP	PAPER TAPE		LISTING	DECTAPE		LINCTAPE		MAGTAPE		OTHER INFORMATION
		BIN	ASCII		U/S	D/S	U/S	D/S	U/S	D/S	
11-180	$ 1.	$	$2.	$ Inc.	$	$	$	$	$	$	
11-181	1.		2.	Inc.							
11-182	1.			Inc.							
11-183	1.	8.	8.	Inc.							
11-184	1.		8.	Inc.							
11-185	1.			Inc.							
11-186	1.		2.	Inc.							
11-187	1.			Inc.	8.	20.					1 DTA; 1 Cassette U/S $10 - D/S - $2
11-188	1.		2.	Inc.							
11-189	1.		8.	Inc.							
11-190	1.		2.	Inc.							
11-191	1.		2.	Inc.							
11-192	1.	8.	12.	10.							
11-193	1.		8.	Inc.							
11-194	1.		8.	Inc.							
11-195	1.			On tape	8.	20.					1 DTA (obj,src,doc,listing)
11-196	1.		8.	Inc.	8.	20.					1 DTA (src,doc,LDA)
11-197	1.	2.	8.	Inc.							
11-198	1.			10.	8.	20.					Same DTA (1) (obj,src)
11-199	1.				8.	20.					
11-200	1.				8.	20.					1 DTA; RK05 or RX01 Disk
11-201	1.	2.	8.								
11-202					8.	20.					1 DTA (src,doc)
11-203					8.	20.					1 DTA (src)
11-204	1.		8.								
11-205	1.										3 Cassettes U/S $30. - D/S $60
11-206	1.				8.	20.					1 DTA (src)
11-207	1.			Inc.	8.	20.					1 DTA (src)
11-208	1.			10.	8.	20.					1 DTA (obj,src)
11-209	1.	2.	8.	Inc.							
11-210	1.								25.	40.	1 MTA - 1200'
11-211	1.		16.	10.							
11-212	2.				8.	20.					1 DTA (obj,src)
11-213	1.		2.								
11-214	1.		12.								
11-215	1.				8.	20.					1 DTA (src)
11-216	1.			Inc.	8.	20.					1 DTA (obj,src)

INC - Included with write-up

U/S - User Supplied Tape (Certified)

D/S - DECUS Supplied Tape

For information not contained on this sheet see General Information

DECUS SERVICE CHARGES

NOTE: WRITE-UP CHARGE DOES NOT APPLY WHEN CORRESPONDING MEDIA IS ORDERED

DECUS NO.	WRITE-UP	PAPER TAPE		LISTING	DECTAPE		LINCTAPE		MAGTAPE		OTHER INFORMATION
		BIN	ASCII		U/S	D/S	U/S	D/S	U/S	D/S	
11-217	$ 1.	$	$	$ Inc.	$ 8.	$ 20.	$	$	$	$	1 DTA (src)
11-218	1.			10.	8.	20.					1 DTA (obj,src)
11-219	1.	2.									
11-220	1.	2.									
11-221	1.				8.	20.					1 DTA (src)
11-222	On tape				8.	20.					1 DTA (obj,src)
11-223	1.		8.	Inc.	8.	20.					1 DTA
11-224	1.		12.								
11-225	1.	12.	16.	10.							
11-226	1.			Inc.	8.	20.					1 DTA (src)
11-227	1.		2.	Inc.							
11-228	1.		8.	Inc.							
11-229	1.				8.	20.					1 DTA (src)
11-230											1 Cassette - U/S $8; D/S $18
11-231	2.			On tape	16.	40.					2 DTA (1-listing; 1-program)
11-232	1.								25.	40.	1 MTA - 600'
11-233	1.	2.	8.	Inc.							
11-234	1.				8.	20.					1 DTA (src,doc)
11-235	1.		2.	Inc.							
11-236					8.	20.					1 DTA (obj,src,doc)

INC - Included with write-up

U/S - User Supplied Tape (Certified)

D/S - DECUS Supplied Tape

For information not contained on this sheet see General Information

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RSTS11-5	CREATE AND CREAT1
RSTS11-6a	RESEQ - Program Resequencing
RSTS11-7	Accounting Package
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RSTS11-67	HPPLOT.BAS - Hewlett-Packard 7202A Graphic Plotter Programs
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DECUS NO.	TITLE

RSTS11-61a

HELPER - Editing and Renumbering BASIC-PLUS Programs

Eliezer Naddor and Rainer von Saleski, Johns Hopkins University, Baltimore, Maryland

Program HELPER provides a means for editing BASIC-PLUS programs or formatted ASCII files. It can also be used to renumber any or all line numbers in a program or in a file with line numbers. Thirteen different commands are available for editing and renumbering, including commands for finding and changing of strings; adding, checking, listing or deleting lines; and several options for renumbering.

HELPER also provides certain general services for which ten different commands are available. The services include punching, naming, and cataloging programs and files; accepting messages; and providing numerous illustrative examples of all commands.

The design and documentation allow relatively easy modifications of the existing commands and addition of new ones.

Monitor/Operating System: RSTS/E VØ5B or VØ5C
Core Storage Required: 10K User area
Source Language: BASIC-PLUS

RSTS11-62

Bentley Variety Package

Ross Kass, Darryl Johnson, et al, Bentley College, Waltham, Massachusetts

This package contains a variety of routines. Among the subjects included are: Accounting, Games, Government, Management (including two critical path routines), Mathematics, Physics, Science, Statistics, and Utilities.

Operating System: RSTS
Storage Requirement: Not more than 8K
Source Language: BASIC-PLUS

RSTS11-63

NORTON - Astronomical Ephemeris Program Package

Warren A. Leach
Submitted by: Hartwell "Rusty" Whitney, OMSI Community Research Center, Portland, Oregon

NORTON is a RSTS BASIC-PLUS package which gives planet and asteroid positions for any date from January 1, 1900. It will run under RSTS Versions 4 or 5 (8K Job Max). Key phrases are astronomy, planetary position calculator, word processing and solar system simulation.

Storage Requirement: 8k
Restrictions: Does not include comet calculations or graphics programs
Source Language: BASIC-PLUS

RSTS11-64

NMRSIM - Nuclear Magnetic Resonance Simulation and Plotting Program

James S. Evans, Lawrence University, Appleton, Wisconsin

Especially designed for a timesharing environment, NMRSIM simulates nmr spectra using hypothesized values of coupling constants, chemical shifts, rf power, and relaxation times. Fifteen operational modules in three source program segments interact dynamically, requesting parameters in a natural order, computing and plotting spectra for up to six spin-1/2 nuclei or fewer with larger spins, permitting revisions of parameters with minimal repetition, and protecting against erroneous keyboard entries. Line spectrum files can be computed at any terminal and stored on disk for later plotting with the program. The plotting subroutines, which give full control over scaling of the plot with only four input numbers, support the Tektronix 4010 graphics terminal, the TSP-12 or TSP-212 plotting systems, and the Hewlett-Packard 7200A/7202A graphic plotters. Note: DECUS NO. 10-221 is a similar program in FORTRAN.

Operating System: RSTS V4A-12, 05-21, 05B-24
Storage Requirement: 8K user area
Source Language: BASIC-PLUS

RSTS11-65

SPPLT - Hybrid Orbital Contour Plotting Program

Stephen L. Holmgren
Submitted by: James S. Evans, Lawrence University, Appleton, Wisconsin

Especially designed for a timesharing environment, SPPLT prepares accurate contour plots of hybrid atomic orbitals with specified contour levels, effective nuclear charge, amounts of 2s and 2p character, and geometric operations (scaling, translation, rotation). After plotting, the user can replot the same orbital with different scaling parameters, or perform calculations for a different orbital shape. The program's operational modules are contained in two source program segments with automatic chaining. The plotting subroutines support the Tektronix 4010 graphics terminal, the TSP-12 or TSP-212 plotting systems, and the Hewlett-Packard 7200A/7202A graphic plotters. Note: DECUS NO. 10-212A&B is an equivalent program written in PDP-10 BASIC, Version 17.

Operating System: RSTS V05-21, V05B-24
Storage Requirement: 8K user area
Source Language: BASIC-PLUS

RSTS11-66

Elementary Instructional Programs, Volume II

Robert A. Huntsman
Submitted by: John A. Christensen, Idaho Falls School District No. 91, Idaho Falls, Idaho

This series of 10 programs is designed to supplement the elementary or junior high instruction program. They also can be used for remedial work in high school. The programs not only drill the student in number facts for all four operations, but some of the programs drill the student on problems such as: [ ] x 6 = 48. What is [ ] ? The unique thing about this package is that the programs are timed. The object is to do as many of a given type of problems as can be done in the given amount of time. The student who does the most sets the record. Each time the program is run the record holder's name is printed with his record and the student then tries to beat that record so he can be recorded as the record holder. This feature is optional.

A complete documentation of the package and program listings can be printed on a printer by running from the DECtape the program 'PRINT' under the RSTS monitor.

Storage Requirement:	28K
Source Language:	BASIC-PLUS

RSTS11-67

HPPLOT.BAS - Hewlett-Packard 7202A Graphic Plotter Programs

Richard T. Witek, Aurora College, Aurora, Illinois

HPPLOT and the set of programs that go with it are written to be used with a HP-7202A plotter. The set of programs will plot data or functions. The user sets the minimum and maximum for X and Y. The user also may label the X, and/or Y axis plus put a title on the graph.

Minimum Hardware:	PDP-11, Disk Drive, Hewlett-Packard 7202A Graphic Plotter
Other Programs Needed:	RSTS V4A-12
Storage Requirement:	7K
Source Language:	BASIC-PLUS

RSTS11-68

SOLVE - Southeastern On-Line Version of Enrollment

Robert A. Branton, Jr., Southeastern Oklahoma State University, Durant, Oklahoma

SOLVE is an on-line enrollment and student accounting program for colleges. Some of its features include: on-line reservation type enrollment from multiple terminals, on-line access and modification capability for student records, and the printing of needed reports such as enrollment tallies, class rolls, student lists, report cards, grade labels and honor rolls. SOLVE can be tailored to any size college enrollment.

Minimum Hardware:	RSTS V4 or RSTS/E system
Restrictions:	Assumes PRINT using and RECORD I/O options of RSTS
Source Language:	BASIC-PLUS

RSTS11-69

INVSIM - Inventory Simulations

Eliezer Naddor, The Johns Hopkins University, Baltimore, Maryland

INVSIM simulates inventory systems in a time-sharing environment. Its options include heuristic rules for guiding the selection of decision variables, simulation of TZ, SQ and SZ inventory policies, and the ability to find the sensitivity of costs and availability to unit costs, leadtime, demands, randomness and various decisions.

Minimum Hardware:	PDP-11/45, RSTS
Storage Requirement:	8K
Source Language:	BASIC-PLUS

RSTS11-70

WRIST - Wabash Research Investigation Simulation Teacher

Philip F. Spelt and James A. Warden, Wabash College, Crawfordsville, Indiana

This program package, which simulates an assortment of psychology experiments, has been translated into BASIC-PLUS from the Louisville Experiment Simulation System (LESS) by Arthur O. Cromer, et al (HP 2000C BASIC). One model has been added to the original six and a backup file has been incorporated for results so that the user may work on a CRT. There are two categories of programs: the models, which are used by students in simulated laboratory exercises, and the maintenance programs, which allow the instructor to construct and alter models. The routines will run only on a RSTS system (any version) with at least 8K of core per user.

Minimum Hardware:	PDP-11 RSTS system, RK or RP disk, DECtape
Other Programs Needed:	RSTS V4A or RSTS/E, PIP or BACKUP (RSTS Cusps)
Storage Requirement:	8K per user
Restrictions:	Requires two accounts
Source Language:	BASIC-PLUS

RSTS11-71

Matrix Software Company Game and Demo Package

Charles R. Gehman, Matrix Software Company, Beverly Hills, California

Three games and four demos used to demonstrate many of the features of RSTS-11. ACEDU.BAS plays a rather strange version of Aceyducey; CLEAN.BAS types an informative and threatening message on terminals; DIAMND.BAS creates a diamond pattern on the TTY; DIRECT.BAS demonstrates use of certain sysfunctions; FLY.BAS computerized fly-swatter;

RSTS11-71 (Continued)

GUNNER.BAS destroys the enemy; VT05.BAS teaches 'DIRECT CURSOR' control.

Minimum Hardware:	PDP-11 with at least one terminal
Other Programs Needed:	BASIC-PLUS, V05 or later
Source Language:	BASIC-PLUS

RSTS11-72

1401 Simulator (RSTS Version)

Edward R. Giegler
Submitted by: Carl F. Henry, Carleton College, Northfield, Minnesota

The 1401 Simulator (S1401) runs 1401 programs on the PDP-11 RSTS system. It requires 18K of memory in addition to the requirements of RSTS and BASIC-PLUS. Of this 18K, 6K is used by the S1401 "Run-Time System," and the other 12K is "user area." When multiple S1401 jobs are running "Run-Time-System" is shared by all jobs. The "user-areas" are swapped in and out by RSTS, but the "Run-Time-System" remains in memory as long as any RSTS job is using it.

Minimum Hardware:	PDP-11/40 or 11/45
Other Programs Needed:	RSTS/E V5B24
Source Language:	PAL-11

RSTS11-73

Myers Briggs Personality Type Indicator Scoring Program

Gary Oppenheimer, Chase Manhattan Bank, New York, New York

This program will score the MBPI form "F" in 3 to 4 minutes, down from 20 minutes for manual scoring. Patients responses are input through a teletype or CRT. The scoring is output on the same or another device (LP:). Extensive error detection and diagnosis is available. Program may be used by inexperienced operators with only a few minutes training.

Minimum Hardware:	PDP-11 RSTS or RSTS/E System
Storage Requirement:	8K
Source Language:	BASIC-PLUS

RSTS11-74

SYSELF - System Status - Self

Charles R. Gehman, Matrix Software Company, Beverly Hills, California

SYSELF enables the user to find out statistics and other useful information about his current job. It requires NO privileges whatsoever, only that it should be stored execute-only in order that no mischievous users mis-use the program.

Minimum Hardware:	RSTS-11 System, TTY
Source Language:	BASIC-PLUS

RSTS11-75

8008.BAS and 8080.BAS

R. J. Tapp and G. D. Young, University of Victoria, Victoria, B. C., Canada

These are cross-assemblers for the 8008 and 8080 microprocessors which use a language similar to Intel's standard assembly language: instruction mnemonics are identical, but pseudo-instructions and expression formats are slightly different. Output is in the form of an assembly listing, alphabetical symbol table and object code in standard Intel hex format.

Minimum Hardware:	RSTS V4A-12
Storage Requirement:	8K
Source Language:	BASIC-PLUS

RSTS11-76

CYCLES

Susan Lewis, Signal Processing Systems, Inc., Waltham, Massachusetts

This program formats a biorhythm chart for printing on either a user terminal or a line printer. Output may be directed to a CRT or hard copy terminal, to the line printer, or to a disk file. Output files beginning with an "L" are formatted slightly longer and wider for the line printer.

The biorhythms are calculated by methods which assume birth and current dates to be between January 1, 1901 and December 31, 1999.

Source Language:	BASIC-PLUS

RSTS11-77

ULTRAG - Advanced Function Graphing Program

Jeffrey Mogul, 218 Franklin Street, Newton, Massachusetts

ULTRAG is an advanced graphing program for use with the teletype or line printer. It will graph up to four functions of one variable simultaneously. If the graph doesn't fit on one sheet of paper, ULTRAG prints it on several sheets which are then placed together. The main feature of the program is that function definitions are typed in while running the program -- no modifications of the source program are needed. It can graph any BASIC-PLUS arithmetic statement, as well as Arc-trig, Hyperbolic, and Arc-hyperbolic functions. It also prints a table of the functional values for the points graphed.

Minimum Hardware:	RSTS V4A or V04B, line printer optional
Storage Requirement:	8K
Restrictions:	May exceed core under certain circumstances
Source Language:	BASIC-PLUS

RSTS11-78

XREF: Cross-Referencer for BASIC-PLUS Programs

Jeffrey Mogul, 218 Franklin Street, Newton, Massachusetts

XREF will generate a cross-referencing of any BASIC-PLUS source program. The output consists of a table of all of the lines in the program which are referenced by a GOTO, GOSUB, RESUME, etc. at some line in the program. The referencing lines are printed next to the lines that they reference. In addition, lines which are referenced but do not exist in the program can optionally be indicated on the printout. XREF will handle any proper BASIC-PLUS program, including multiple line statements and statements including ERL=, ERL>, etc.

Minimum Hardware:	RSTS V4A or VØ4B
Storage Requirement:	6K minimum
Source Language:	BASIC-PLUS

RSTS11-79

RSTS Performance Measurement Package

Bud Dawson, MacMillan Bleodel Ltd., Vancouver, B. C., Canada
Submitted by: Rollins Turner, Digital Equipment Corporation, Maynard, Massachusetts

This package includes four programs used at MacMillan Bleodel.

1. LOGTIM.BAS stores the incremental values from the monitor statistics tables in a disk file approximately once per hour.

2. PRTIME.BAS prints data files created by "LOGTIM" in tabular form by hours.

3. GRAPH.BAS prints pertinent "CPU-TIME" data files created by "LOGTIM" in graph form by hours.

4. SUMGPH.BAS prints a summary graph of "CPU-TIME" by days within one or more months.

Minimum Hardware:	Any RSTS/E system
Source Language:	BASIC-PLUS

RSTS11-80

TDL/SCRIPT

Rollins Turner, Digital Equipment Corporation, Maynard, Massachusetts

These programs allow the user to define and run interactive tests of the RSTS/E system. SCRIPT allows him to specify inputs to one or more keyboards, along with timing information. He can then run these "scripts" and the system will operate as if the specified lines of text had been input to real keyboards.

TDL allows the user to define more complex tests, using scripts as primitives. TDL is an extension of BASIC-PLUS, and allows the user to define the control structure of the test in terms of BASIC instructions. A preprocessor converts the TDL program into pure BASIC-PLUS. This program is then run to perform the test.

Minimum Hardware:	Any RSTS/E System
Source Language:	BASIC-PLUS

RSTS11-81

BATCH - Batch Processing for the PDP-11/20 with RSTS11

Albert F. Gettier, Jr., Loyola College, Baltimore, Maryland

BATCH is a program that simulates batch processing for RSTS11 version 4. The user places all the commands that are to be executed by the computer in a data file using BATCH. When all the commands are in the file, BATCH then "forces" the commands to a terminal as the computer is ready to receive them.

Through the use of BATCH, editing of the data file is quick and easy. BATCH also allows for procedures to be defined and has other runtime options and macros. Diagnostics and the date and time that the command is "forced" to the computer are printed on the terminal.

Monitor/Operating System:	RSTS11, V4
Core Storage Required:	8K
Hardware Required:	PDP-11/20 with peripherals required for RSTS
Source Language:	BASIC-PLUS
Restrictions, Deficiencies, Problems:	RSTS V4 only; must run under a priviledged account

RSTS11-82

Laramie High ECMEP Math Programs

Mark Arnold, Laramie High School, Laramie, Wyoming

The Laramie High ECMEP Math Programs demonstrate several concepts of elementary analysis through BASIC-PLUS programs.

There are several programs which demonstrate that Taylor series of elementary functions hold true for complex numbers. Also included are Triangle solving programs, Taylor Series for real numbers, and other programs showing the use of the computer in Mathematics.

No tapes are offered, but the listings are brief enough to be entered via the keyboard. A printed example is included for each routine.

Monitor/Operating System:	RSTS V4A-12
Source Language:	BASIC-PLUS
Restrictions, Deficiencies, Problems:	TAN^{-1} evaluation incorrect

RSTS11-83

PAPTAP, MAGTAP, LISTAC - Additional Cusps for RSTS11

Mark Arnold, Laramie Senior High School, Laramie, Wyoming

Additional CUSP's for RSTS-11 include: PAPTAP, a program to create ASCII paper tapes, block letter headings; MAGTAP, for reading EBCDIC formatted 9-track magtapes; LISTAC, for listing all files in an account, by use of the /BR option of PIP, and other utilities.

The source tapes offered are examples of PAPTAP. Listings for all routines are short enough to be entered via keyboard.

Monitor/Operating System: RSTS V4A-12
Source Language: BASIC-PLUS

RSTS11-84

OMSI PILOT-73

Jim Hollcraft, Oregon Museum of Science and Industry, Portland, Oregon

OMSI PILOT-73 enables RSTS/E V5 to understand "core PILOT" by translating it to BASIC-PLUS. Although the initial translation can take as much as five minutes, the outputted BASIC-PLUS program runs faster than interpretive versions.

Monitor/Operating System: RSTS/E V5
Core Storage Required: 8K
Source Language: BASIC-PLUS

RSTS11-85

BRANCH - DECAL Branching Scheme for "N" Right Out of "T" Tries

Jay Coniam, Berea High School, Berea, Ohio

This program designs the branching scheme for a given test in a lesson written in DECAL and determines if a student has achieved a standard of "N" correct answers out ot "T" tries.

Monitor/Operating System: RSTS/E VØ5-C
Core Storage Required: 4K
Source Language: BASIC-PLUS

DECUS SERVICE CHARGES

NOTE: WRITE-UP CHARGE DOES NOT APPLY WHEN CORRESPONDING MEDIA IS ORDERED

DECUS NO.	WRITE-UP	PAPER TAPE		LISTING	DECTAPE		LINCTAPE		MAGTAPE		OTHER INFORMATION
		BIN	ASCII		U/S	D/S	U/S	D/S	U/S	D/S	
RSTS11-73	$ 1.	$	$	$ Inc.	$	$	$	$	$	$	
RSTS11-74	1.			Inc.							
RSTS11-75	Abstract				8.	20.					1 DTA (src,doc)
RSTS11-76	1.			Inc.							
RSTS11-77	1.		2.	Inc.							
RSTS11-78	1.		2.	Inc.							
RSTS11-79	1.				8.	20.					1 DTA (src,doc)
RSTS11-80	4*				8.	20.					1 DTA (src,doc); *plus media charge
RSTS11-81	1.		2.								
RSTS11-82	1.			Inc.							
RSTS11-83	1.		2.	Inc.							Tapes are examples of PAPTAP
RSTS11-84	1.				8.	20.					1 DTA (src,doc)
RSTS11-85	1.		2.	Inc.							

COMPLETE LIBRARY AVAILABLE ON DISK OR MAGTAPE. PROGRAMS AVAILABLE ON ANY MEDIA DESIRED

INC - Included with write-up

U/S - User Supplied Tape (Certified)

D/S - DECUS Supplied Tape

For information not contained on this sheet see General Information

DEC 7-(369)-1112A-R1074

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